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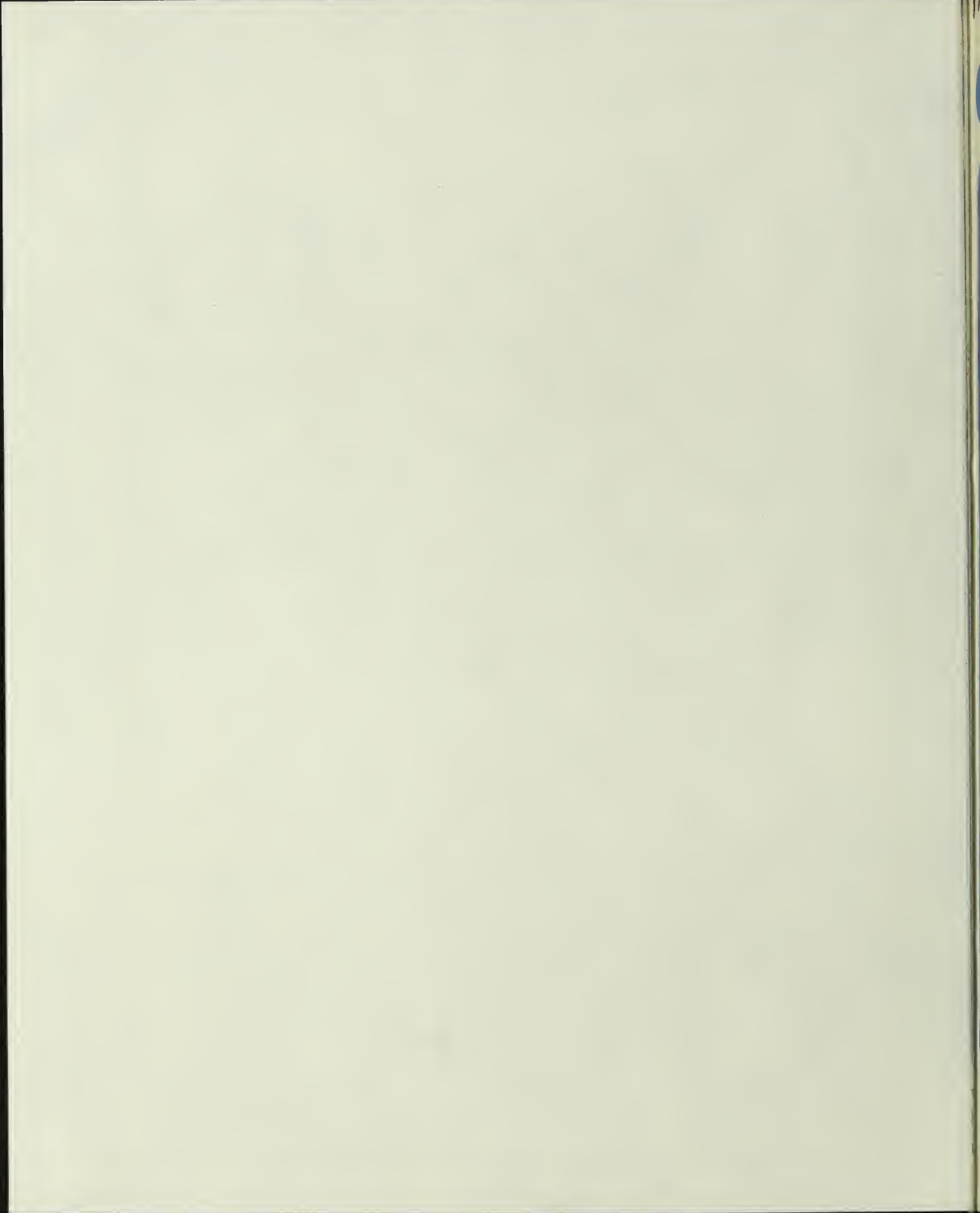


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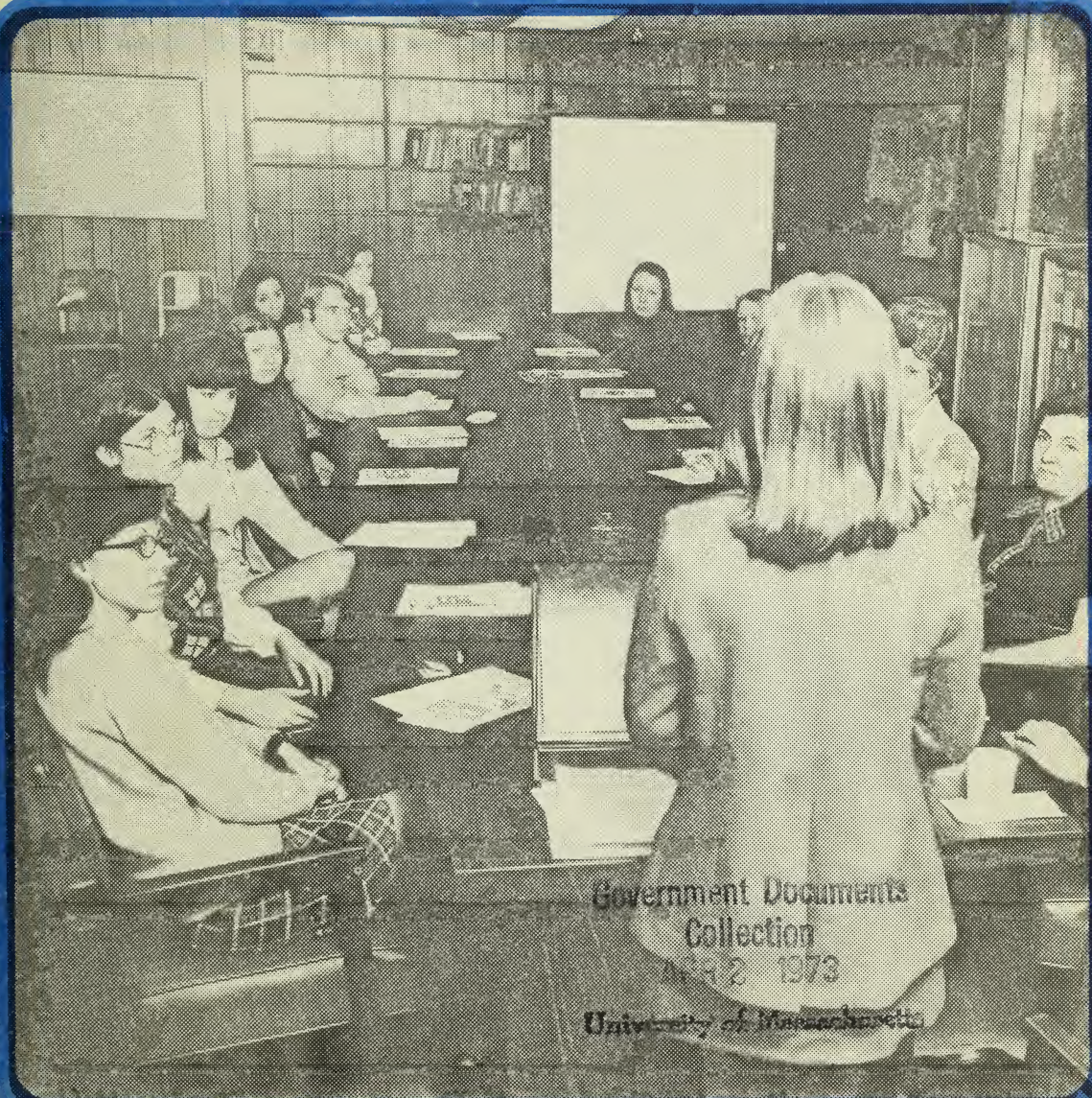
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COMMONHEALTH



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University of Massachusetts

massachusetts department of public health
volume 2 number 1 winter 1973

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Massachusetts Department of Public Health
Office of Health Education
600 Washington Street
Boston, Massachusetts 02111

Publication of this document approved by
Alfred C. Holland,
State Purchasing Agent, No. 15.

The Department complies with the
Civil Rights Act, Title VI, 1964.

Second-class postage paid at Boston, Mass.

COMMONHEALTH

Winter 1973 Vol. 2, No. 1 (Series II)

Quarterly publication (Winter, Spring, Summer, Fall issues) of the
Massachusetts Department of
Public Health
600 Washington Street
Boston, Massachusetts 02111

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TRAINING

for Health Careers

WALTER E. C. GEORGE, Director
Office of Manpower Development and Training

What do medical and dental students, sanitary engineers, high school seniors, hospital supervisory personnel, and secretarial staff of the Department of Public Health have in common? It may seem unlikely, but they have all received some work-related training through the Department's Office of Manpower Development and Training. An extension of the former Division of Public Health Research, Development and Professional Training, the Training Section of the Office has a dual responsibility: 1) to assess the training and development needs of the Department, and 2) to administer and conduct training programs for personnel within the Department and for individuals in other official and voluntary health agencies.

The training activities are as varied as the persons who participate in the programs. For some, the Office provides direct training; for others, consultative services. It also makes use of outside resources and field experiences, and counsels health workers on career goals.

ORIENTATION SESSION

In an agency as vast as the Department of Public Health, which is responsible for the activities of about 5,000 workers, a new employee may, and often does, find it confusing to understand the purposes and services of the major Divisions. To guide newcomers through the intricacies of the Departmental structure, the Training Section offers a one-day orientation session, within



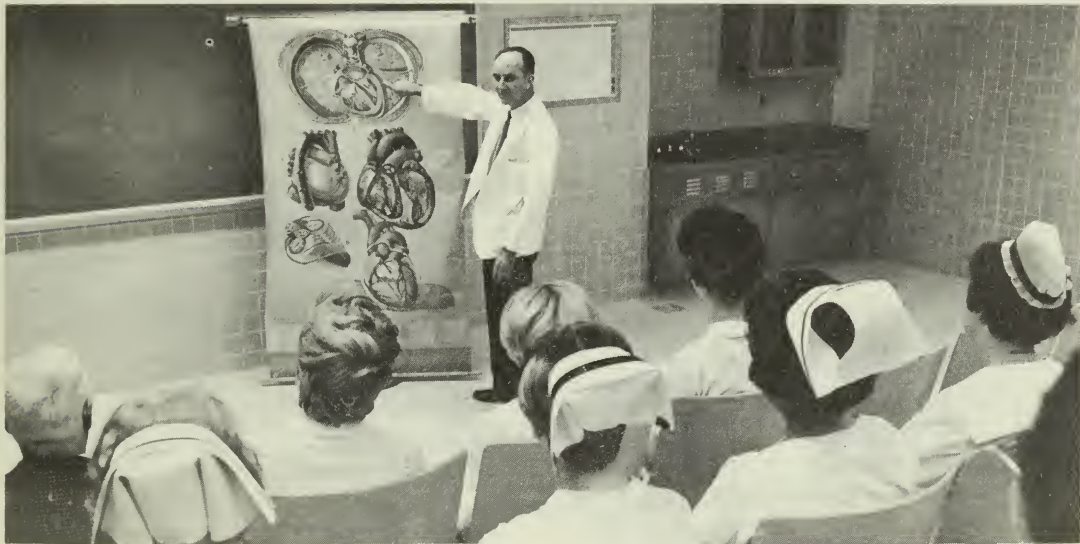
In-house program for engineers and inspectors on "Field Enforcement Aspects of Air Pollution," held at Waltham Field Station.

three months of employment whenever possible, at the Department's headquarters in Boston. The orientation session gives the new employee an opportunity both to meet people from other units and to become acquainted with some of the management personnel of the Department. Employees are able to ask questions about the activities and functioning of the Department and to become more aware of the interrelation-

ships of its many operations. The orientation session is purposely scheduled after an employee has had time to become familiar with his own job, division and work site before being introduced to the larger operation of the Department.

TRAINING CENTER

To ensure the Department of its trained manpower needs, the Training Section



Felipe P. Novo, M.D., Chief of Medical Staff, Tewksbury Hospital, conducting seminar for hospital nurses.

carries on extensive in-service education. This activity can take many forms: attendance at a one-day seminar or workshop, participation in a longer, more intensive program, or enrollment in a job-related course taken for academic credit. At the same time, each Division is encouraged to determine the training needs of its own employees and to consult with the Training Section to

learn what programs are available. As an aid to the Divisions, the Section maintains an active file of brochures and catalogues of professional programs, courses given by schools and colleges, training schedules of federal agencies (e.g., Center for Disease Control, Environmental Protection Agency, U.S. Civil Service, both regional and national) and state programs.

In addition, the Director of the Bureau of Personnel and Standardization of the Commonwealth has the responsibility, under Chapter 7, Section 28 A, of the Massachusetts General Laws, to develop programs for the "training, encouragement and advancement" of employees of the Commonwealth. Wherever applicable, the Training Section of the DPH coordinates and recommends attendance at such programs within the limits of available funds. Courses offered by the Employee Training Section of the Bureau of Personnel and Standardization have been considerably expanded since 1971 as a result of the funding received under the Intergovernmental Personnel Act (IPA). The Commonwealth has been able to establish a Training Center in Brighton, where it presents ongoing, in-service programs throughout the year. The DPH Training Section submits a priority listing of candidates to participate in these programs.

IN-HOUSE TRAINING

How does the Office of Manpower Development and Training determine whether to conduct its own in-house program or to utilize the offerings of the State Employee Training Section or of other outside programs? The number of individuals involved and the focus of the training session are the determining factors. For example, an in-house supervisory seminar was given during the spring and summer of 1972 at the Lemuel Shattuck Hospital. Forty individuals, supervisory personnel from all units of

the hospital, attended two-hour sessions for 14 weeks. Meeting in two separate sections, the groups discussed a wide range of topics aimed, in part, to create communication patterns within the hospital: human relations, role of the supervisor, communications in supervision, employee relations, decision making and human resources development. Had the participants been assigned to an outside, long-term program, the desired internal benefits might not have been achieved. On the other hand, when the purpose is to expose an employee to contact with his counterpart in other state agencies, an in-house program is not effective.

The need for more in-house training is, however, clearly recognized by the Office of Manpower Development and Training. The emphasis must be on classes for entry level personnel to help develop their skills and to upgrade their positions. Concomitantly, supervisory training at all levels must be accelerated to acquaint staff with the resources available to the Department, as well as with the rules and regulations of Civil Service, Bureau of Personnel, Labor Relations Commission, and Retirement Board. Few state employees are aware of the benefits to which they are entitled or of the programs open to them.

For technical upgrading, however, the Training Section has found it more advantageous to send individuals into courses conducted on the outside.



Demonstration class for physiotherapists, Lakeville Hospital.

The Training Section carries on specific in-residence training programs in nursing for licensed practical nurses, attendant nurses and those with associate degrees. Other programs are in civil engineering and business administration.

To keep abreast of federal funds that may be available to support training efforts beneficial to the Department, as well as to local communities and organizations, the Section maintains liaison with the regional office of Health, Education and Welfare. Such funds are normally unavailable for in-house programs limited to Departmental personnel.

Recent programs organized by the Training Section indicate its concern for providing training and education where the need is the greatest. A course in Food Sanitation in Institutions was given for the two top administrators in all state institutions that have large feeding facilities. Attending the two-day course, which was given twice, were responsible personnel not only from the Department of Public Health, but from the Departments of Mental Health and Corrections, and from the Soldier's Homes. The sessions covered all aspects of food sanitation such as storage, handling, preparation and cooking, and a

frequently overlooked aspect of sanitation - dishwashing.

As more cities and towns voted to fluoridate their public water supplies, the Training Section took the initiative in organizing two courses on Fluoride Determinations in Water for individuals who work in local water supply departments. Of necessity, these first courses were limited to communities with equipment for fluoridating that is now in use, or that will soon be put into operation.

Another course concerned with water supply - The Disinfection of Water Supply - was given for sanitarians in cities and towns in the Central Region of Massachusetts. Plans are now being formulated to repeat the course in other regions of the state.

INTENSIVE COURSE

An intensive five-day course entitled "Ground Water Technology" was organized on an in-service basis for Departmental engineers whose main area of concern is water supply.

Covering a quite different but sensitive area of communication with the public, a course was held in December 1972 for members of the Department's clerical and secretarial staff. The course covered the deceptively simple subject of telephone usage but stressed the important public relations aspect of how to answer the phone and to direct callers to the information they seek.

A significant, long-term program that is generally unknown to most individuals is available under the Educational Leave of Absence Program. This provides for a leave of absence at full pay for one year or at half pay for two years to pursue a course of studies at a college or university. To be eligible for participation, an applicant must be a "permanent" employee of the Commonwealth, or a "temporary" employee who has had at least three years of continuous service with the state immediately prior to requesting a leave. In addition, the employee must obtain the approval of his immediate supervisor and the Commissioner of Public Health. Before the individual receives such an educational leave of absence, he or she is required to sign a service contract with the Commonwealth to work for a period twice as long as the period of leave. All employee benefits accrue to the employee during the period of study.

APPRENTICESHIPS

A growing area of responsibility for the Training Section is to provide field, laboratory or internship experience for persons who are not employed by the Department. These programs are invaluable in exposing students to the workings of a state agency, particularly Public Health. Now in its fifth year, the Apprenticeship Training Program for Medical and Dental Students has been funded by a grant for five more years by the United States Public Health

Service. The purpose of the program is threefold:

1. To involve students in the practical application of the principles of public health and preventive medicine and dentistry. . . .
2. To contribute to the preparation of future physicians and dentists for their role in community health practice.
3. To provide an insight into the potentials and challenges for careers in public health. . . .

BREADTH OF INTEREST

Division heads and other members of the Department, heads of local health agencies and of medical and dental schools submit projects that emphasize public health, preventive medicine and dentistry. Students chosen for the program are then assigned to preceptors, who provide initial orientation centered mainly on the accepted projects, and an overview of the agencies where the interns will be working. Preceptors guide the students during the course of the project, and are responsible for evaluation and direction of the students' performance. The program provided for places for only 22 first and second-year medical and dental students. In 1972, 38 applicants applied, a drop from the high of 80 in the previous year. Much of the drop resulted from medical and

dental schools' changing to a 12-month academic year. The program accepted 15 medical students and 7 dental students who were enrolled in seven different schools.

A description of some of the projects gives an indication of the breadth of interest and the high level of research undertaken by the 21 young people who remained with the program throughout the summer.

One medical student participated in exploring the relationship between chronic disease and nutrition by conducting clinical and nutritional studies of patients, and by correlating the findings with patient's sex, age, diagnosis, duration of disease and social factors. The study was carried out at the Rutland Heights Hospital, where the intern studied all admissions to the 40-bed alcoholic ward at the hospital, as well as general admissions.

Working in the Office of Health Research of the Department, another medical student assisted in a study of cancer linkage with industrial hazards. The program included cancer of the larynx, lung cancer and mesothelioma, a rare form of lung cancer now being linked to exposure to asbestos. Under the supervision of a physician and research epidemiologist, the student was able to learn epidemiologic research procedures.

Another student worked at the Division of Biologic Laboratories on the purification of both horse and rabbit anti-human lymphocyte globulin for use in renal transplant procedures at Boston City Hospital. The serum fractionation procedures were still in the research and development stage and involved the use of chromatographic as well as immuno-adsorbent techniques.

The health needs of the large number of young people who come into Boston each summer was the subject of a study carried out through the Division of Community Operations. Two medical students interviewed these young people to determine what were their experiences as they sought medical care in hospital clinics and special clinics set up to meet a transient youth population.

DENTAL PROGRAMS

A second-year dental student spent a second summer as a medical-dental coordinator for the summer Head Start program in Brookline. His responsibility was to ensure the delivery of health care benefits to all the children as provided by Head Start guidelines. The student was also assigned responsibilities in the Dental Clinic, where he was able to observe the practice of children's dentistry and to participate in the management and treatment of patients.

Another dental student with experience in statistical analysis was assigned to

the Department of Social Dentistry at Tufts University School of Dentistry. Here he analyzed and summarized data from a 1971 dental screening program in the Boston Chinese Community. These findings would be valuable in planning the dental program in a community health center.

COMMUNITY MEDICINE

The internship type program is not limited to the fields of medicine and dentistry. In cooperation with the University of Massachusetts (Amherst), the Department provides field experience to public service interns who are pursuing a two-year master's degree program in Public Administration. The group of eight spend all of the third semester visiting various departments and agencies of the Commonwealth to get an overview of the entire governmental process. During the fourth semester, the students work in a single agency. The Department of Public Health, which has participated during the four years of the program, has had one student assigned to a specific Division. After receiving her degree, the student returned to take a full-time job with the Division of Medical Care.

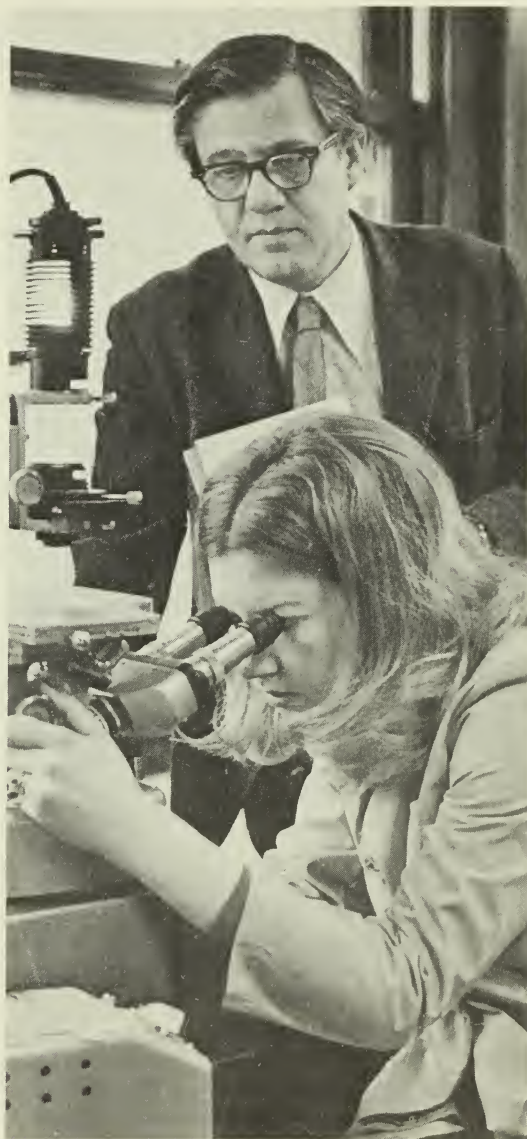
A new program in affiliation with the University of Massachusetts Medical School (Worcester) will bring two medical students into the Department as part of a stepped-up clerkship in the Department of Community Medicine. One student will learn the intricacies of licensure and regulation of health facilities

in the Commonwealth by working in the Division of Medical Care. A second student will be assigned to the office of the Commissioner to gain an insight into the myriad details involved in the provision of health care to the people of Massachusetts.

Because the Department firmly believes it has an obligation to aid high school and college students in their choice of careers, particularly in the burgeoning field of public health, the Training Section is expanding its internship programs. A program now in the planning stage is being organized in cooperation with the College of Community and Public Service, University of Massachusetts (Boston). Scheduled to open in September 1973, the program will combine field work with classroom studies. At the present time, the Department is exploring the possible alternatives in providing some of the guided field work.

FLEXIBLE CLASSROOM

Such work-study experiences are now being utilized on the secondary school level. The Training Section has cooperated with the Boston School Department in a pilot project in which high school seniors are able to spend one day a week working in a job situation where they can learn more about possible future careers. During the last academic year, three students, two young women and one young man, who were enrolled



First-year medical student working under the supervision of Robert F. Gilfillan, Ph.D., Director, Virus Laboratory.

in the flexible classroom program, worked at the Lemuel Shattuck Hospital. The women were assigned to the Nursing Department, where they functioned as nurses aides; the young man, to the Social Work Department. As a result of her experience at the Shattuck, one of the women applied for entrance to a school of nursing. The male student, whose main interest had previously been in the field of music, evinced a desire to combine music and social work as a means of providing therapy to the chronically ill. Whether he will pursue this as his ultimate career or not, his exposure to the broad field of social work made him aware of career possibilities of which he had no previous knowledge.

One may ask, "What about the people now working in the Department of Public

Health? What else does the Office of Manpower Development and Training do for them?" In addition to the organized training activities mentioned earlier in this article, the Office encourages employees to seek its assistance in planning their own professional growth. Individual counseling is available to those employees who wish it.

As the demands for more health workers accelerate, the Office of Manpower Development and Training continues to study, plan and offer more programs within and outside the Department. Information on existing programs may be secured by writing to: Training Section, Office of Manpower Development and Training, 600 Washington Street, Boston, Massachusetts 02111. ■

Family Planning

WILLIAM J. BICKNELL, M.D., Commissioner
Massachusetts Department of Public Health

I'd like to go over some of the things we are thinking about, directions we are going in, and my thoughts on family planning and related questions. Then we'll have a question and answer period and I can hear what you have to say.

Since I have been here, I have learned a fair amount about state government. One point is clear -- it is not a terribly responsive beast, and it is not terribly accountable. Introducing mechanisms to increase responsibility and accountability in real rather than artificial ways seems to me to be extremely important -- to provide orientation and direction that point the Department ahead, that anticipate change and at least do not block change introduced by others. It makes a great deal of sense that organizational

change and philosophical change have to begin at the top; and a lot of people have been extremely helpful in this process.

The Health Department is taking an increasing role and will inevitably do more and more in the wholesale aspects of the delivery of care. One of our prime missions for the next ten years is to tend to the business of reform of service delivery so there will be reasonable access to reasonable care at reasonable cost for most of the people most of the time. This will be an extremely important focus. A separate but related idea, illustrated in recent days by the Red Tide situation, is the capacity of the Department to protect the public's health in unexpected situations and to make sure that mass dangers that go beyond the

*Remarks made at Professional Institute in Family Planning, sponsored by the Planned Parenthood League of Massachusetts, September 28, 1972. Dr. Bicknell was introduced to the meeting by Stephen Weiner, Esq., Special Assistant to Governor Sargent.

delivery of services are recognized in advance and dealt with in a responsive way.

REGULATORY POWERS

Insofar as direct services are concerned, the federal experience, not unlike the state experience, has been that the less the state is involved as a direct provider of services, probably the better. That goes for family planning too. Nor do I think we should have much to do with funds that come into the state for family planning. Our impact in terms of service delivery should be through our regulatory powers, our standard setting powers. This should be built into all the various activities we perform. How are rates set? What should be part of everybody's normal way of getting medical care? What is a necessary part of clinic services? When you speak of a prepaid benefit package, what is in it? All the things you here are interested in should automatically be there. Rather than having just an isolated entity which is a family planning program, family planning has to be decategorized and introduced into everything that has to do with organization and delivery of care (with obvious exceptions at each end of the age scale). This is the kind of approach I would see us taking.

My personal experience in family planning has been through OEO, but not through the OEO family planning program. Although part of health affairs in

OEO, family planning was quite separate within health affairs. There were those of us in so-called comprehensive health services who felt that family planning was an integral part of such services. There were others who felt that the only way to get a family planning program going was to have it separate, distinct and categorical. This difference was never really adequately resolved.

SUPPORTIVE COUNSELING

I would like to see every new delivery unit, if not old ones, include family planning as a part of necessary and automatic medical care and service. But because this will be a while coming and won't always work, there should probably be some separately available services. But however they're made available, it must be done with the full array of supportive counseling, sensitive and non-technical, as part of the package. One must be especially cautious in one area - the younger range - not to overpush. In Berkeley, I was aware that there were lots of personal problems with overaggressive, overzealous parents introducing their 12, 13, 14 and 15 year old daughters to various contraceptive techniques, it seemed, before they wanted it. Here, for instance, parent education is particularly important. Whenever possible, the state should move in the direction of integrating the venereal disease programs it does maintain into comprehensive health programs as well as into family planning services.

I would be interested in learning, either from questions now or at a later time, what you think might conceivably work to get at that problem. How much of a problem really is it? How much of an investment should be made and what should be the nature and character of that investment? How much of the classic methodology should be questioned? And are there some alternatives to it? We are groping hard for better ideas in that area.

GOALS ACCOMPLISHED

As an organization or movement, family planning stands in some danger, a few years down the pike, of having accomplished a lot of its goals. Services will be widely available, the controversial aspects will have faded, and then you'll have the problem of what on earth to do with yourselves. It's not unreasonable to address oneself to that early, which is what you seem to be doing, and avoid the agony of other organizations which have tried to deny their accomplishments and still live. Now let's take some questions and answers back and forth.

Q How much money has the state allocated to family planning programs?

A Well, in the State Health Department, I'm sure it's close to zero. We provide some small amount of support through the Division of Family Health Services. It's extremely small, I would think.

Q Why would the Health Department allow its venereal disease control program to be cut back? Those of us in family planning programs are seeing patients who are exposed to V.D., and yet we are told the Health Department can no longer do V.D. screening for the family planning clinics. Why?

A I think what you are probably referring to was a cutback in the state laboratory services in the V.D. control program, which relates to state budget cuts. There wasn't enough money to go around, is what it amounts to. Routine serological testing for syphilis got cut back but can be requested on a by-application basis. Dr. Madoff, Director, State Laboratory Institute feels that it's not necessarily such a good role for the state to be in. This testing is a service easily available and cheap, and it really shouldn't be necessary to go to a state lab for it. There are three ways to approach this question: First, we may have inadvertently denied this service to family planning clinics. Second, our V.D. program, as much as possible, should be integrated into the family planning clinics. And third, I'm not sure that the state's doing testing is a good long-term solution and that it's not better to have available a testing capability. But at this time the labs simply don't have the money to provide that service. It's not unlike aspects of the throat culture program that were cut back. How many family planning clinics are there? I'm curious. If we

could select in favor of a group such as this, that might be worth exploring. In fact, I will make a note of it, and if I don't forget . . . I will look into it. O.K., that's a good point.

Q I'd like to know whether the state is trying to get IV-A monies and whether family planning would be included.

A Does the state plan for IV-A monies? I don't know if family planning is included. There is no reason why it shouldn't or couldn't be. The issue is making sure to get into the IV-A pot before it dries up, but it can be used in extremely broad and creative ways. In my last exposure, it was used to start public service broadcasting in Alaska.

Q In talking about abortion laws and how liberal they can be, including the laws on sterilization, it's clearly not the laws that are hindering progress but the hospitals. Does the Department of Public Health have any regulatory powers over hospitals and how they respond to these issues?

A In some senses, but I don't think we'll get anywhere by saying to a hospital of some religious persuasion that you'd better do this or you'll lose your license. That's not going to work very well. I would guess that forced inclusion of abortion services as a part of hospital services wouldn't tend to work.

Q Why not? You can only ask people in favor of abortion to work on it.

A Depends on what you want to have, whether you want to get at the minds of the people in that institution or whether you want to provide services to people who need them, and if you're interested in the latter . . .

Q Both.

A O.K. The Department's business is making sure that adequate services are available to everyone. That doesn't mean that everybody has to provide every service. They can be lumped and they can be separated. I think it's more feasible to address them separately.

Q You have narrowed yourself down to religious hospitals. What about free hospitals?

A The kind of services we are talking about are a reasonable part of medical care. If there is an institution which is a primary provider of care for people and that hospital is publicly funded, it seems to me that there is some obligation to provide a range of services that meets the intent of the law and the needs. Those are different issues. I have not explored in this state exactly how city and county hospitals are chartered and funded. So I'm not certain my answer is correct. But as more and more public funds come in, your question has more merit. I don't think it is the place of the state or the Department of Health to get into moral persuasion. I think it is eminently sound for private groups to do so.

Q Does the Department of Health have any provisions for funding clinics for V.D. detection and treatment?

A We do fund some I think. We have a problem with existing clinics. We need to get more funds and get those decategorized. Now there may be situations where there will be a family planning session on Monday, Wednesday and Friday in town A, and one on Tuesday and Thursday in town B, and the only way to integrate is to move the patient from Monday to Tuesday. We have to do more. We need to bring these services together. I think services should be rationalized on a regional, subregional and local level. Resources of people and money should be brought together into some structure that is as "non-state" as possible. The less we actually run, the better services are likely to be.

Q It seems to be becoming apparent that one of the principal hindrances to offering services in a variety of institutions is discomfort in dealing with sexuality on the part of the administrators. Does anyone have any thoughts about a program for training administrative personnel?

A I think that kind of generic approach would make a lot of sense. I don't think much thought's been given to it, to more specifically answer your question.

Q Could you tell me how the Health Department regulates for hospital-based,

free-standing clinics and how these regulations affect free-standing clinics that aren't in hospitals?

A Let me ask you a question first. We're coming up with a new set of regulations for hospitals. Are you referring to those which are yet to come out?

Q I'm referring to a memo which you sent to the Massachusetts Hospital Association about a proposal at Harvard for very stringent regulations for free-standing clinics.

A I'm going to let Steve Weiner answer that. (Weiner: I've gotten myself involved in the various regulation-drafting aspects of the Department. The Department is revising the licensing regulations, that is what it comes down to. They've been operating on regulations dating back to the late 1940's, early 1950's. There has been a hearing on clinic regulations, which I'll talk about in a moment, and there is going to be a series of hearings during October on fairly massive revision of the hospital regulations. What they did on clinic regulations is something I thought was a fairly good idea. They drew up a set of regulations which apply to both independently licensed clinics and what are now called hospital-based, free-standing clinics. The reason they had to do this is because there are two types of clinics operating in the Commonwealth: One is licensed independently as a clinic under whatever chapter of the General Laws. This license

provision has an exception in it which says that clinics operated by hospitals don't have to be independently licensed, but can operate under the hospital's license. As I understand it, the idea behind it was that no one ever knew whether an outpatient department was a clinic or a hospital and this was a way to get around it. What's happened over the last five to six years is the proliferation of neighborhood health centers, a good development, but something of a quandary because a lot of them start up under hospital support and get licensed under the hospital's license because it's easier. That raises a whole host of problems: How to regulate them, what to do from the rate-setting point of view. If they're part of the hospitals' rates, you begin to lose the advantage of having a lower cost method of delivering health care. So what the Department has done is to set up one class of regulations for independently licensed clinics and apply these same regulations to free-standing, hospital-based clinics. It's an attempt to bring uniformity to a situation that is absolutely insane right now. I think we have the support of a good part of the neighborhood health centers on that.)

Commissioner Bicknell: Let me speak a little about the problem of clinics. There is a common feeling that anything called a neighborhood health clinic is good, and there has been too little positive criticism directed at what goes on in some new free-standing clinics. I was appalled to find that we were endorsing

as good, under a certificate of need, free-standing clinics and "comprehensive health centers" with 1,200 or 1,400 square feet. It's a bit of a game and a joke. What exactly are you promising? What kind of a message is it for the people on the street who are walking through when you can't deliver what is needed, when there are no back-up relationships, when the funding and the manpower cannot deliver what the title and publicity suggest? When one of the critical needs facing the state in terms of health care is the development of a quality ambulatory care capacity, it's no service for the state or local supporters to stand behind second-class efforts. One of the major problems OEO had with health centers is that they did not look critically within their own house; and many of the very large, well funded health centers forgot about such issues as program, quality and management. It was enough to be committed to doing good. If one is going to really address himself to some of the major problems within the medical system, then the new stuff had better be first-class or it will be a real setback.

Q I think it's unfortunate that you're directing this criticism at the neighborhood health centers, because I think there's been a problem in the big hospitals.

A I know what you're saying, but my total business before I came here had been neighborhood health centers. There

is something called "Objective Six" of HSMHA which essentially says that you no longer need money if you are in a low-income area and are a successful health center because if you are successful, you will somehow have generated local support. It's a kind of progressive defunding operation. Now that is an absurd argument. There is another one, which is a Bureau of Budget argument, that says the neighborhood health centers foster inequity in that you have an underserved population and you put in isolated islands of care, thus creating inequity. The way to get around the inequity is to unfund them and convert that funding into a more equitable mechanism, like Title XIX. I'm not saying I support that - it's another nutty argument as is the one behind Objective Six.

Now let's go back and say that health centers make good sense, look what they are doing; and some others say they have looked and implied they found certain weaknesses - there is overstaffing, over payment and non-comparable salaries. Then, you are in a very weak position. You must be able to defend your program and at least have it in reasonable shape . . . and be better than the hospitals. You've got to be better than the existing stuff because you are super-vulnerable and you have to be in a super-strong position so you can say, "Those are false issues. The real issues are the absurdities in your premises, so let's not get caught up in whether we're doing a good job or a bad job. Of course we're doing a good job." This approach is essential for survival. ■

Cancer Detection Program

in Western Massachusetts

I. HERBERT SCHEFFER, M.D., Superintendent
Western Massachusetts Hospital

LESLIE LIPWORTH, M.D., Former Director*
Office of Health Research

The Western Massachusetts Hospital in Westfield, one of the seven facilities operated by the Department of Public Health, provides extensive health services to the four western counties of the Commonwealth. One of its outstanding projects is the Community Programs of Cancer Case Finding, which function on an on-going basis. In 1969, the Department of Public Health conducted a survey of cancer incidence in the State Mental Health Hospitals of Western Massachusetts. The results of the study indicated that it would be advantageous to conduct programmed cancer case-finding surveys of the adult women in these institutions. The staff of the Western Massachusetts Hospital has since provided a continuing cytology service to the women inpatients, 20 years of age and older, in the State Mental Hospitals

in Northampton, Monson and Belcher-town, as well as to the patients in the Western Massachusetts Hospital.

Statistics from these hospital-based programs for the period from May 1, 1969 to October 1, 1972 appear in Table 1.

PROGRAM EXTENDED

In 1970 and 1971, the physician and nursing staffs of the Western Massachusetts Hospital extended the cervical and mammary cancer detection clinics to seven communities within the geographic area served by the hospital. The significantly greater yield in case finding has undoubtedly had the effect of stimulating and encouraging the development of a broadened detection effort, whether by community programs offered

*Since this article was prepared for publication, Dr. Lipworth resigned from the Department of Public Health to accept the post of Associate Professor, Department of Community Medicine, University of Massachusetts Medical School.

Table 1

No. of Patients	No. of Pap Smears	Doubtful Slides	Positive Slides
5,322	9,200	73	46

by area hospitals or by consultation with private physicians.

EVENING CLINICS

Clinics were held in the evening to attract the largest number of women, and one to three nights were spent in each community. Two of the seven towns were visited twice in the 24-month period. Each community is scheduled for a clinic on a yearly basis. The program for each clinic includes a breast examination, Pap smear, an instructive film on the proper method of breast self-examination, and another film on cervical and uterine cancer. Initially, a chest X-ray was offered to women who participated in the program. This was discontinued during the past year because of the possible hazard of overexposure to gamma radiation.

FOLLOW-UP

Papanicolaou slides are processed and classified in the pathology laboratory of the Western Massachusetts Hospital. During the period 1970-1971, a total of 3,192 patients was seen at the area clinics; of this number, 2,684 had Papanicolaou smears. The results of these examinations appear in Table 2.

Where pathology was found, a letter was sent both to the physician and to the patient advising her to see her physician. The latter was also given a short description of the abnormal finding. Negative reports were sent to the patient as soon after the examination as possible. Questionnaires were later sent to the physicians for follow-up information.

As a result of the manual breast examination, physicians reported that 34 patients had a mass in the breast. Enlarged cervical lymph nodes were found in an additional patient; these nodes were caused by metastatic mammary cancer which had previously been treated. Of the 34 patients with breast lesions suspicious of cancer, two had breast cancer. In both cases, the tumor was localized. Twenty-three patients seen by their physician were found to have no malignant disease. The results in four cases were unknown since no follow-up information had been received from the physicians. The remaining five had not reported to their physicians or to a consultant to whom they had been referred.

Among the 3,192 patients, physicians found 286 abnormal physical conditions

Table 2

Western Massachusetts Cancer Detection Clinic Cervical Cancer 1970-1971				
Total Pap Smears	2,684	Confirmed By Biopsy As Cancer	Further Investi- gation Negative	Unknown
Positive	6	4	1	1
Suspicious	20	1*	11	8 (did not report to M.D.)
Unsatisfactory	40		13	27**

* Invasive Cancer of Cervix

** 22 Patients with unsatisfactory smears were followed up at their physician's office, at the Western Massachusetts Hospital Outpatient Department, or at their local hospitals.

in the screening programs, apart from those patients with malignant tumors referred to above. Common examples were: prolapse of the uterus, bladder or rectum (39), fibroids (24), polyps (25) or lacerations or erosions of the uterine cervix. Replies from physicians were received in 101 of 207 patients with gynecological conditions in this group. Twenty-nine of these 101 patients had corrective minor or major surgery; 15 were kept under observation and 12 were referred to gynecologists for opinion.

SUMMARY

In 3,192 patients seen at the screening clinics, four cases of carcinoma in situ, one localized invasive tumor of the

cervix and two localized breast cancers were detected. A much larger number of conditions not caused by malignant disease, but which required treatment or surveillance, were also uncovered.

The results of a questionnaire from the State Health Department to laboratories in Massachusetts indicate that probably more than a half-million women in Massachusetts undergo cervical cytology annually at the hands of private practitioners and professional staff of community clinics. By comparison, early detection clinics organized by State Health Departments are likely to reach a very small proportion of those at risk. Thus a major objective of a state screening program is to demonstrate to the community that the Health Depart-

ment regards early detection of certain conditions as an important health activity whenever primary health care is provided. It is of interest that three voluntary hospitals in Western Massachusetts have developed their own Papanicolaou screening programs since the inception of the screening clinics.

The broad involvement of the communities concerned in this type of case-finding program is notable and suggests the opportunity for community participation in other similar programs under the umbrella of community medical programs sponsored by the Department of Public Health.

FREE! FREE! FREE!

CANCER DETECTION CLINIC

BREAST and PAP SMEAR EXAMINATION

- Film-Self Breast Exam
- Pap Test (if desired)
- Breast Exam
- Chest X-ray
- Opportunity to ask Questions of Doctor

NATIONAL GUARD ARMORY

ARMORY DR., CHICOPEE

Sept. 28 & 30 — 7:00-9:00 P.M.

Sponsored by Chicopee Bus. & Prof. Women's Club In Cooperation with
Western Massachusetts Hospital, Westfield, Mass.

"THE LIFE YOU SAVE MAY BE YOUR OWN"

Holyoke Daily Transcript, September 25, 1971.

Many community groups and individuals have actively participated in these efforts. Publicity has been provided without cost to the Commonwealth by the news media, including radio and television. Women's clubs have been generous of their assistance in publicizing the events and working as registrars and guides. Local government officials have made public facilities, including memorial halls and National Guard Armories, available on a cooperative basis.

Professional services required to staff these programs have been contributed largely on a voluntary basis by professional personnel of the Western Massachusetts Hospital, assisted by community physicians and staffs of other hospitals that become involved. Special credit must be given to two of the principal participants in this program: Helen Harmand, M.D., Assistant Superintendent; and Eilene V. Buzzee, R.N., M.Ed., Director of Nurses, both from the Western Massachusetts Hospital. ■

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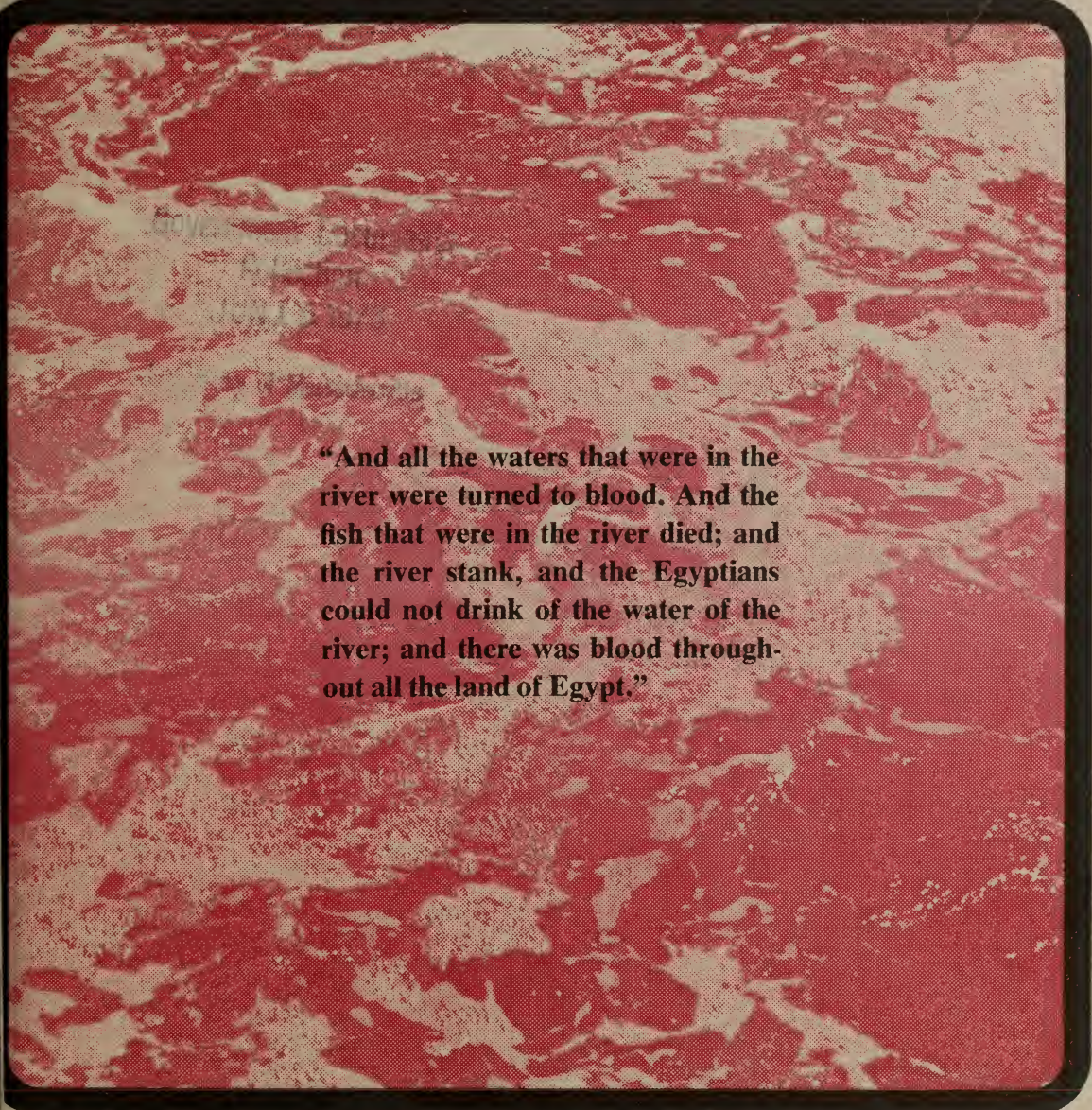
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COMMON HEALTH



"And all the waters that were in the river were turned to blood. And the fish that were in the river died; and the river stank, and the Egyptians could not drink of the water of the river; and there was blood throughout all the land of Egypt."

Massachusetts department of public health

Volume 2 number 2 spring 1973

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Massachusetts Department of Public
Office of Health Education
600 Washington Street
Boston, Massachusetts 02111

Publication of this document approved by
Alfred C. Holland, State Purchasing Agent.
No. 15

Second-class postage paid at Boston, Mass.

COMMONHEALTH

Spring 1973 Vol. 2, No. 2 (Series II)

Quarterly publication (Winter, Spring,
Summer, Fall issues) of the
Massachusetts Department of
Public Health
600 Washington Street
Boston, Massachusetts 02111

William J. Bicknell, M.D.
Commissioner

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PSP

The Paralytic Shellfish Poisoning Incident in Massachusetts

September 1971

**William J. Bicknell M.D., M.P.H.
Commissioner of
Public Health**

**John C. Collins, M.S., M.S.H.
Director
Division of Environmental Health**

Presented at the American Public Health
Association Centennial Meeting, Atlantic
City, November 13, 1972.

Introduction

In September 1972, the Commonwealth of Massachusetts experienced an outbreak of paralytic shellfish poisoning (PSP) caused by the consumption of shellfish harvested from Massachusetts coastal areas, which had been infested with the marine dinoflagellate, Gonyaulax tamarensis. This unicellular, microscopic alga synthesizes a potent toxin that is accumulated by shellfish during their normal feeding habits. The toxin becomes a public health problem only when great numbers of the organism are present in the waters overlying shellfish harvesting areas. Although PSP has been recognized for over a century as a clinical entity, this outbreak was the first of its kind in Massachusetts history. It required prompt and decisive action by the Massachusetts Department

of Public Health to prevent the episode from developing into an epidemic of major proportions.

This report reviews the overall PSP problem and details the response and activities of various agencies in the Commonwealth under the coordination of the Department of Public Health in coping with the unprecedented PSP emergency as it occurred in Massachusetts.

History

"And all the waters that were in the river were turned to blood. And the fish that were in the river died; and the river stank, and the Egyptians could not drink of the water of the river; and there was blood throughout all the land of Egypt."

This vivid description, recorded in Exodus 7: 20-21, is one of the earliest references to "blooms" of toxic dinoflagellates. Ancient Greek authors applied the name "Red Sea" to all the coasts of Arabia,¹ apparently as a result of the red cast imparted to the sea by the frequent infestation of these waters by marine dinoflagellates. In addition to ancient literature, red tide reports occur in the logs of numerous navigators of the 16th century.²

Probably the first record of a human case of paralytic shellfish poisoning appeared in a French work published in 1689 that cited the case of a 20-year-old girl "who had eaten too well of mussels."³ [See Appendix 1.] The major incidents of PSP in North America have occurred along the California and Alaskan coasts and within the Bay of Fundy, Canada. Records of Captain George Vancouver's early explorations⁴ of the Pacific Northwest give a fascinating account of an incident which occurred in June 1793 when several crew members experienced paralytic poisoning, one of whom died within a few hours after breakfasting on mussels. [See Appendix 2.] In 1799, a group of Aleutian hunters stopped near Sitka, Alaska, and consumed a dinner of mussels; in less than two hours, more than 100 men were fatally stricken.⁵

The first reported outbreak of paralytic shellfish poisoning in the United States occurred in 1903 at Timber Cove, California.⁶ Twenty-three years later, 102 cases, including six deaths, were reported in the San Francisco area.⁶ Outbreaks of PSP in Canada occurred in 1936 in Nova Scotia, in 1945 on both the New Brunswick and Nova Scotia sides of the Bay of Fundy, and sporadically up to the present time.⁷ [See Appendix 3.] Researchers on the west coast have identified the causative organism in this area as Gonyaulax catenella.⁸ It was not until 1961 that Prakash furnished conclusive evidence that the paralytic shellfish poisoning episodes

in Canada were caused by Gonyaulax tamarensis.⁹

Gonyaulax tamarensis

Live cells of G. tamarensis are spherical, measuring 30 to 40 microns in diameter, and range in color from yellowish green to yellowish brown (Figure 1). The generation time for dinoflagellates is dependent upon temperature, light intensity, salinity and nutrient concentration. Some of the factors that stimulate their growth are: surface temperature about 10°C, high light intensity, and a relatively stable water column (calm seas). The organism flourishes in temperate coastal waters containing low concentrations of nitrogen and phosphorus. The most important single environmental factor appears to be temperature.¹⁰



Gonyaulax tamarensis,
marine dinoflagellate.

When unfavorable conditions to G. tamarensis are encountered, the organism is capable of encysting. This happens chiefly during the fall and winter when water temperature is lower. In the cyst stage, the organism retains its toxicity; this may explain the high toxin levels found during the winter in sea scallops that feed on benthic microscopic organisms.

Occasionally, dinoflagellate "blooms" impart a yellow, brown, green, black, blue or red discoloration to the sea. This phenomenon has been referred to as "red water," "red current," and most often by the term "red tide."

Toxicology and Physiology of PSP

The paralytic toxin synthesized by marine dinoflagellates ranks among the most potent non-protein poisons known to man. Comparative tests have indicated that PSP is 50 times stronger than the paralytic poison curare.⁷ As a result of an epidemiological investigation by Tennant, et al.,⁷ of an outbreak involving seven persons in the Province of Quebec, the amount of the poison necessary to cause severe intoxication and death has been reported. Four persons in this incident developed severe symptoms after the ingestion of from 124 to 190 micrograms of toxin, while deaths resulted in one case from the ingestion of 1,102 micrograms, and in another case from the ingestion of 456 micrograms of toxin.

Experience has shown that some persons seem to tolerate the poison more readily than others. The first symptoms of PSP in human beings usually develop within 30 minutes after the ingestion of toxic shellfish. The symptoms of PSP are distinctive and readily distinguishable from other types of shellfish related illnesses. Early effects, which may occur within a few minutes after ingestion, include slight tingling, numbness or burning sensation of the lips, gums, tongue and face. These preliminary signs may be followed by paresthesia and muscle weakness, which gradually progress to the neck, arms and legs. This may result in complete paralysis of the extremities.

In severe cases, these symptoms are followed by ataxia, general motor incoordination, respiratory paralysis and even death. In fatal cases, death due to respiratory paralysis results within 3 to 12 hours after intoxication. Patients who survive the first 12 hours generally recover rapidly without any permanent residual effects.

In moderately severe cases, the toxic weakness and locomotion difficulty are accompanied by a peculiar feeling of lightness. In fact, some patients have reported that they experienced a floating or flying sensation. Throughout an attack of PSP, the mental processes do not appear to be affected, and most victims remain calm and conscious during the illness. Other symptoms that may occur

include: headache, rapid pulse, slightly subnormal temperature, respiratory distress and impairment of vision. Gastrointestinal symptoms, nausea, vomiting, diarrhea and abdominal pain occur infrequently.

The treatment of paralytic shellfish poisoning cases is primarily symptomatic since there is no specific antidote for this poison. The initial treatment usually consists of evacuation of the stomach as soon as intoxication is recognized. However, this practice cannot be totally relied upon in severe cases to prevent the absorption of a fatal dose of toxin. Victims of PSP should receive no treatment that may stimulate increased absorption of the poison by the digestive system. Alcohol is therefore prohibited since it readily dissolves the poison and hastens absorption. In all cases where breathing difficulty develops, artificial respiration should be administered promptly and continued as long as indicated.

Measurement of PSP Concentration

The most effective means of monitoring shellfish for PSP is based on a bioassay procedure using mice. Attempts to develop a colorimetric procedure have not been too successful. The mouse bioassay procedure, first devised by Sommer and Meyer,⁸ was modified by Medcof et al.⁷ in 1947 and adopted by the Association of Official Analytical Chemists¹¹ in 1960 as the official method

for paralytic shellfish poison analysis. Briefly, the method involves the following steps: the shellfish are shucked, rinsed in fresh water, drained and ground in a blender until homogeneous. A 100-gram portion of the homogenate is suspended in 100 ml of 0.1 N HCl (pH 2-4); the mixture is then boiled gently for five minutes with intermittent stirring. The mixture is allowed to cool, the pH checked and adjusted, if necessary, and the volume made up to 200 ml with distilled water. One milliliter of the clarified supernatant, or appropriate dilution of it, is injected intraperitoneally into a pre-weighed mouse (17-23 grams) and the death time recorded. The PSP concentration in 100 grams of drained shellfish meat is calculated from the mouse weight, death time and a conversion factor which is determined by bioassay using purified toxin on the mouse strain employed. Any value greater than 80 micrograms per 100 grams is considered hazardous and unsafe for human consumption.¹²

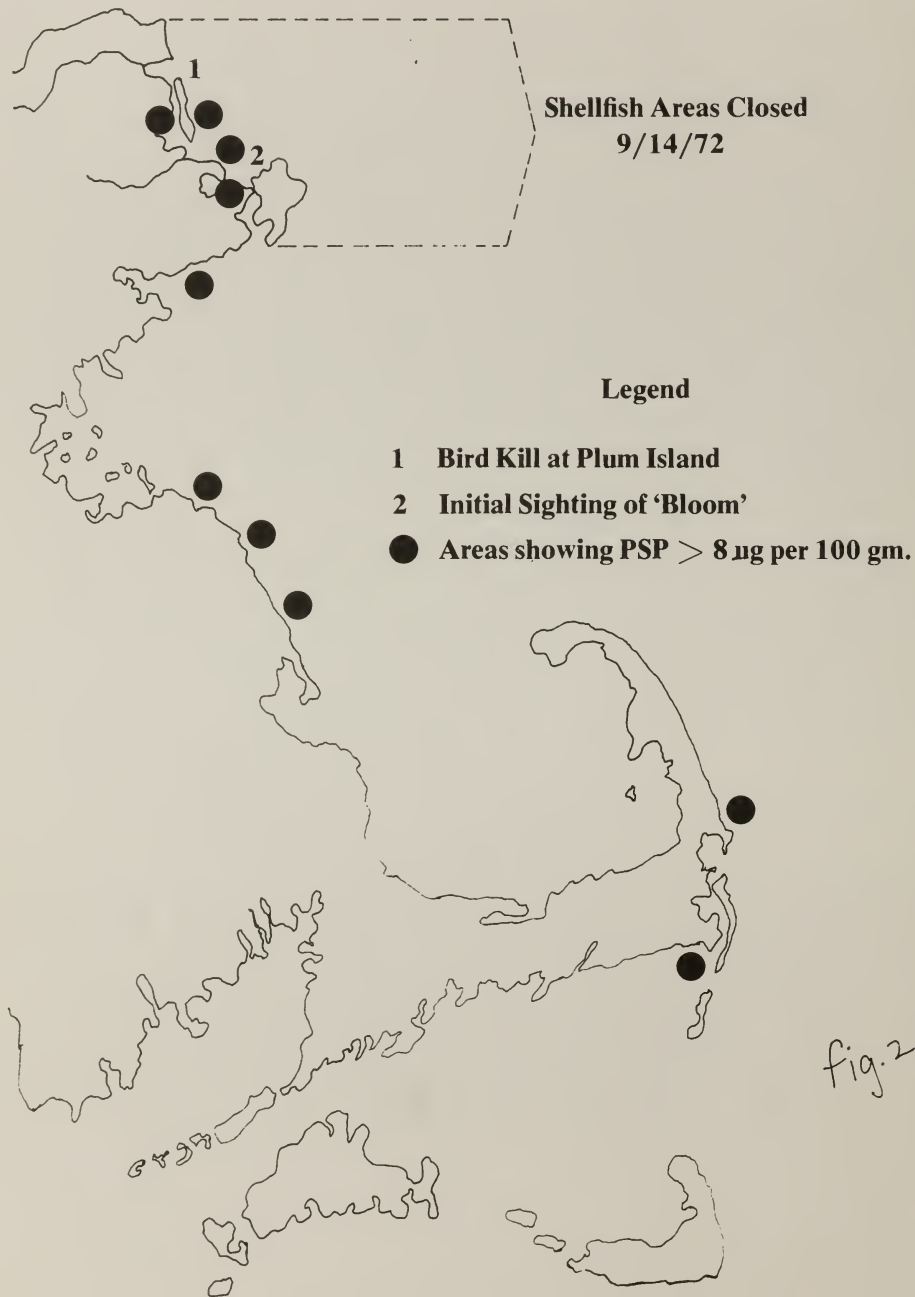
Exposure to PSP in Massachusetts

During the morning of September 14 (Thursday), a Patrol Warden attached to the U.S. Government Parker Wildlife Reservation at Plum Island (Figure 2) telephoned a report to the Division of Environmental Health's Lawrence Experiment Station that an extensive bird kill had occurred within the Merrimack River estuary at Plum Island. He reported that 95 birds, all adults, were

retrieved from the surface of the estuary during a 24-hour period. The warden expressed concern that an additional number of black ducks and gulls might be in the same plight in the nesting grounds bordering this brackish water body. Initially, the cause of death was attributed to an aerial spraying of pesticides. Subsequent analyses performed on the stomach, intestine and muscle tissue of a dead black duck indicated no elevated pesticide levels. Autopsies of dead birds, however, revealed extensive hemorrhaging of the internal organs and the presence of mollusk shells in the stomach.

Before noon on the same day, another report was received from Edward S. Gilfillan, Ph.D., of the University of Massachusetts Marine Biological Laboratory at Hodgkins Cove, Gloucester (Figure 2) that he had observed a reddish-brown mass of marine growth in the water adjacent to his laboratory and had tentatively identified it as a bloom of the marine dinoflagellate, G. tamarensis. The toxic nature of the organism was confirmed by concentrating the cells present in one liter of sea water by membrane filtration, extracting the toxin in the cells with an acid-boil and injecting a mouse intraperitoneally with one milliliter of the cooled, filtered extract. The mouse died within a few minutes. Additional mouse injections verified the presence of lethal substances in the cell extract.

Massachusetts coastal areas showing PSP involvement.



The findings of Dr. Gilfillan were subsequently confirmed by scientists attached to the Lawrence Experiment Station during a visit to his laboratory shortly after his initial report to the Division of Environmental Health.

These two seemingly unrelated incidents along the North Shore of Massachusetts, namely, the bird kill at Plum Island Refuge and the identification of a toxic algal bloom at Gloucester 12 miles to the south, comprised the total body of evidence upon which the Department of Public Health acted and declared the North Shore region from Gloucester to the New Hampshire line closed to the taking of shellfish at 2 p.m., Thursday, September 14, 1972.

The closure order for this section of the coastline was relayed by telephone to the Division of Law Enforcement of the Massachusetts Department of Natural Resources, all local shellfish wardens within the affected area and shellfish officials in the States of New Hampshire and Maine. The Divisions of Food and Drug and Communicable Diseases of the Department of Public Health and local Boards of Health were also alerted to the action of the Division of Environmental Health and briefed on the potential threat posed to the shellfish-consuming public by paralytic shellfish poison.

On Friday, September 15, Governor Francis W. Sargent, upon notification of the G. tamarensis infestation of Massa-

chusetts coastal waters by William J. Bicknell, M.D., Commissioner of Public Health, declared a public health emergency. As a control measure, the Department placed an immediate embargo on the sale and marketing of fresh and frozen shellfish at the wholesale and retail levels. Through the press, radio and television, the public was advised of the emergency situation and instructed not to purchase or consume any fresh shellfish until further notice. Hospitals and physicians were informed of the symptoms of the poison in humans and the supportive and symptomatic therapy used in the treatment of PSP cases.

By Saturday, September 16, the harvesting of all shellfish along the entire 2,000-mile Massachusetts coastline was banned, marketing of all shellfish curtailed, the control program extended to include the confiscation of all shelf stock in markets and restaurants, and a total import and export embargo was enforced.

Intensive monitoring along the entire Massachusetts coastline resulted in the identification of some 2,800 acres of shellfish harvesting areas as contaminated by G. tamarensis.

Epidemiology of Incident

The number of illnesses due to the paralytic shellfish poison incident and the days on which they occurred in Massachusetts are presented in Figure

Number of PSP cases vs. day of onset of symptoms.

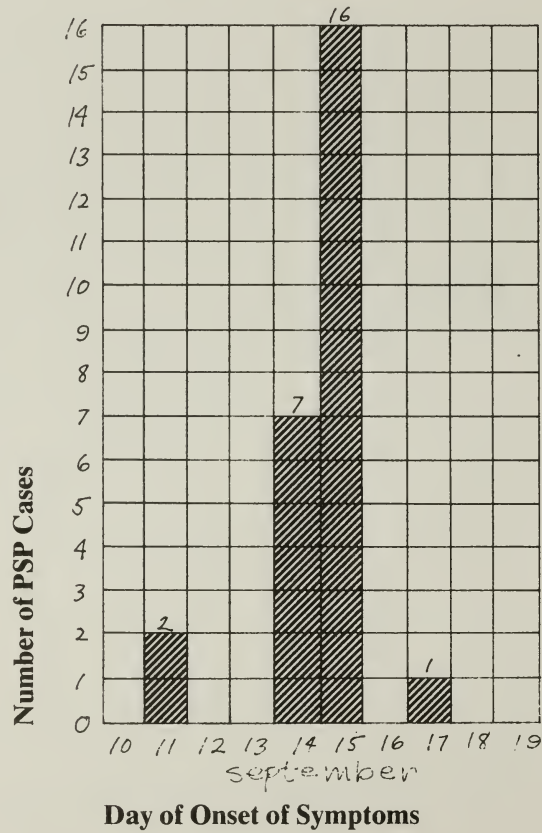


fig.3

3. Of the 26 reported and confirmed cases, only two were classified as severe (requiring respiratory assistance), three as moderate and the remaining 21 cases as mild. Had the Massachusetts Department of Public Health not acted promptly with the information at hand on the 14th, 15th and 16th of September, considering the increased consumption of shellfish on the 15th (Friday, fish day), the widespread sale of Massachusetts shellfish and the high toxin levels subsequently found in the North Shore growing areas, the cases of illness, it has been reliably reported, would have numbered in the hundreds, and quite possibly, thousands.

Environmental Survey

As of September 14, Massachusetts had no established program for monitoring shellfish areas for paralytic shellfish poison. With the sighting of the red tide along the Gloucester coast, the Department collected water samples from the tip of Cape Ann to the New Hampshire line in an effort to determine the extent of the infestation in this area. Microscopic examination of all samples indicated the presence of *G. tamarensis*. Subsequent water sampling over the next two days along the remaining coastline of the state demonstrated the presence of this dinoflagellate at sporadic locations along the South Shore at Scituate, Cohasset, Marshfield, and in sheltered bay locations on Cape Cod (Figure 2). Bioassays of different species in the

above mentioned areas of the South Shore and Cape Cod subsequently showed the presence of PSP. All water samples examined from Boston Harbor, Buzzards Bay and the islands off Cape Cod proved to be negative as were shellfish samples examined from these same areas by the mouse test.

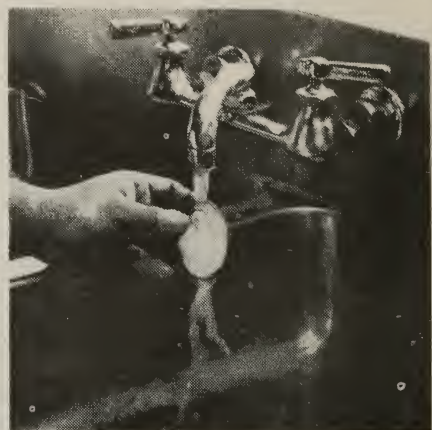
Initial bioassays on the shellfish samples harvested from the North Shore showed accumulations of the poison in the range of 3,000 to 5,000 micrograms per 100 grams of meat. Although shellfish collected from the growing areas within Boston Harbor showed no indication of poison accumulation, it is interesting to note that, following bacterial depuration at the Newburyport Shellfish Depuration Plant (located on the North Shore), these samples then contained a high level of the toxin. Quite obviously, this event indicated a *G. tamarensis* infestation of the water used in the depuration process and resulted in the closing of the depuration plant.

The Department's Division of Food and Drug Laboratory assumed the responsibility for performing bioassays on the shelf stock of markets, restaurants and wholesale dealers. The Lawrence Experiment Station and the Lakeville Laboratory of the Division of Environmental Health and the Cat Cove Marine Research Laboratory of the Division of Marine Fisheries undertook an intensive monitoring program of all shellfish growing areas to determine the locations at which



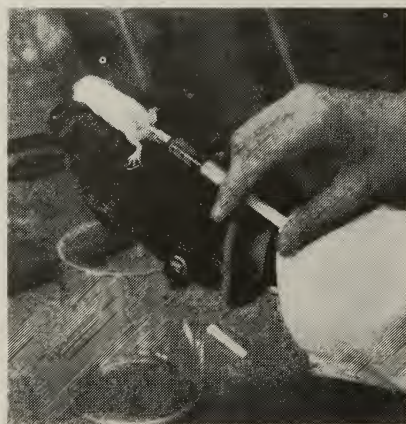
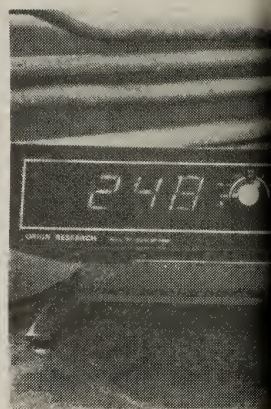
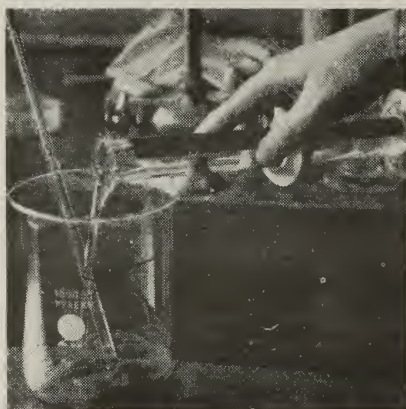
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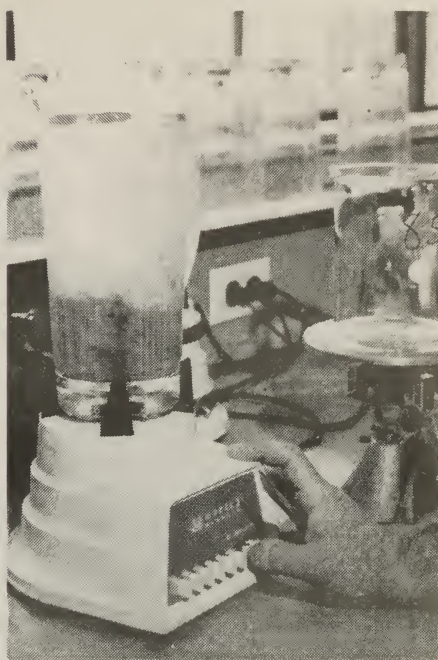
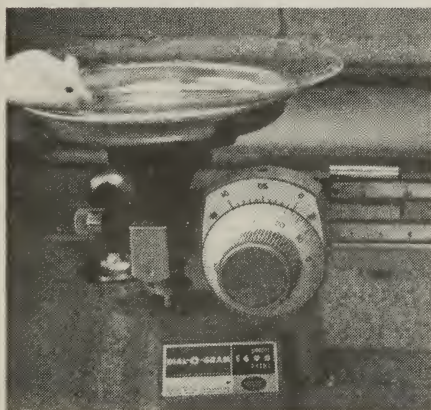
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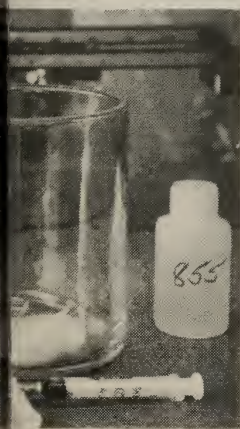
8 3



9 4



5



11

Measurement of PSP Concentration

1. Clams brought to Lawrence Station.
2. Rinsing clams.
3. Shucking rinsed clams.
4. Drained clams.
5. Clams ground in blender.
6. Weighing 100 gr of homogenate.
7. 100 ml of 0.1 N HCL added.
8. Mixture boiled for five minutes.
9. Pre-weighing mouse.
10. Injecting mouse peritoneally.
11. Death time recorded.

toxin accumulation occurred and which varieties of shellfish were implicated.

Along the North Shore, all soft-shell and mussel beds appeared to be contaminated by PSP toxin. On the South Shore, only mussels were found to have accumulated toxin concentrations in excess of the 80 $\mu\text{g}/100$ gram standard. Within Nauset Bay on Cape Cod, soft-shell clams, mussels and scallops showed significant concentrations of PSP. Subsequent analysis of the adductor muscle and the intestine of the scallop showed that the toxin had concentrated in the intestine to values as high as 1,060 μg of PSP while the adductor muscle of the same animal failed to show the presence of the toxin within the sensitivity of the test (40 μg per 100 grams of meat). Quahogs (Venus mercenaria) and oysters (Ostrea virginica) harvested from the same general area as affected mussels and the scallops were found to contain no significant concentrations of PSP.

Detoxification of Shellfish

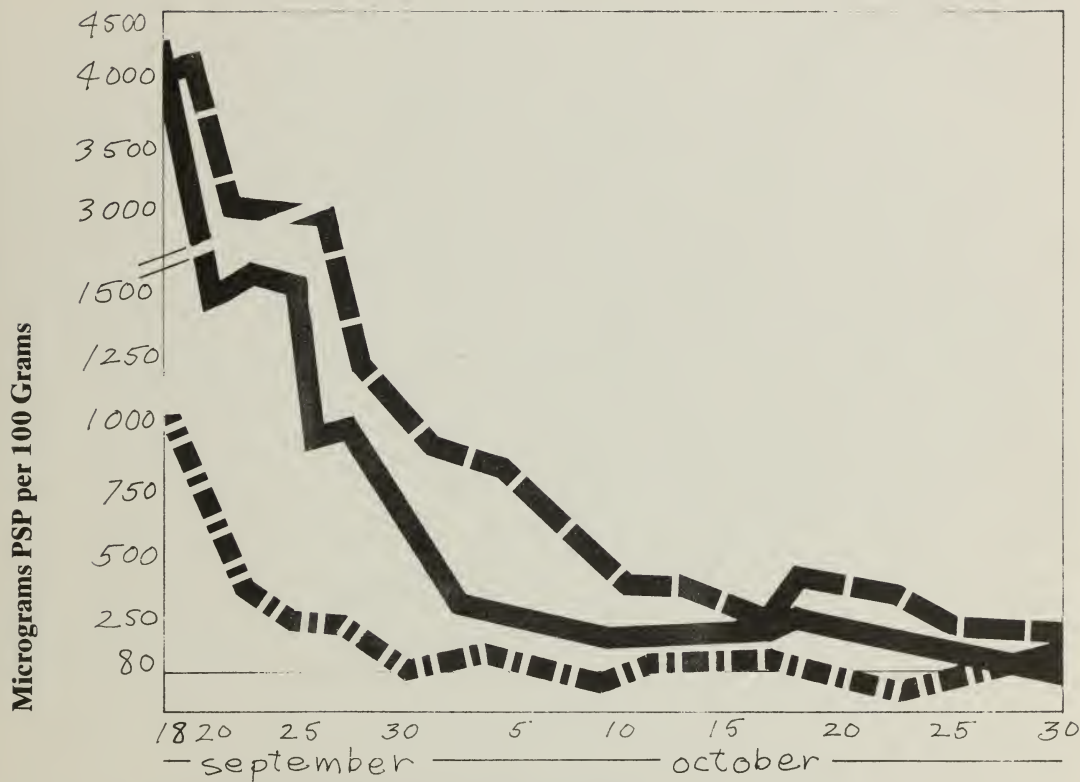
Many attempts have been made in Canada and the United States to develop a commercially feasible procedure for reducing or eliminating shellfish toxicity.⁷ To transplant toxic shellfish to low or non-toxic areas has proven to be uneconomical because of the slow detoxification process. Certain commercial processing methods have achieved varying degrees of success in reducing shellfish toxicity, but most of these

adaptations require drastic procedures such as irradiation, prolonged steaming or pH adjustments. These procedures produce extreme changes in the quality of the products and impair their market acceptability.

The rate at which PSP leaves affected shellfish varies with species and also with the season. Important factors that control the detoxification process are the feeding time (submergence) and any environmental condition, such as water temperature or salinity, that affects molluscan feeding habits.⁷ Ultimately, however, the detoxification rate is greatly dependent upon where the toxin is located in the affected animal. Toxin located in the gastrointestinal tract is eliminated much more readily than tissue-bound toxin. Investigators have shown that shellfish varieties tend to store PSP at different anatomical locations. The greatest concentration of toxin in blue mussels, Mytilus edulis, has been found in the digestive organs or so-called "liver," but in soft-shell clams, Mya arenaria, the poison concentrates in the gills and digestive glands.¹⁰ The toxin absorbed by shellfish exhibits prolonged stability and thus would appear to be highly resistant to bacterial action or to the enzymatic processes of the shellfish.

As a result of the monitoring program established for all shellfish areas that showed the presence of paralytic shellfish poison, it has been possible to

Detoxification of Mya arenaria



Detoxification Curves for Mya arenaria

Harvested from three growing areas on Massachusetts North Shore.

Key

- Gloucester-Cross Creek
- Ipswich-Middle Ground
- Rowley-Labor-in-Vain

fig. 4

Comparison of PSP Levels



Comparison of toxin levels accumulated by Mya arenaria and Mytilus edulis and detoxification pattern of these shellfish varieties.

Key

-  Soft Shell Clam
 Mussel

fig. 5

develop detoxification curves of M. arenaria and M. edulis following the infestation of Massachusetts coastal waters by G. tamarensis. The rate of detoxification exhibited by three soft-shell clam growing areas along the Massachusetts North Shore (Figure 2) are plotted in Figure 4; for soft-shell clam and mussel growing in the same area, in Figure 5. These four growing areas were selected as key monitoring stations to observe the detoxification rate occurring in this area that was most heavily infested with G. tamarensis. On September 18, bioassay tests on soft shell clams harvested from Gloucester and Rowley showed toxin concentrations of 4,000, 4,200, and 1,000 respectively; the mussels and soft-shell clams harvested from Essex showed toxin concentrations of 7,720 and 3,520. It is apparent from the plots in Figures 4 and 5 that the toxin concentration had reached its peak or had started to decrease at the time of the initial bioassay testing. No increases in toxin concentrations were noted in any subsequent sampling of these key monitoring areas.

The higher concentration exhibited by M. edulis is in agreement with Canadian experience. Since feeding time is one of the factors controlling toxin build-up, it is not surprising that the mussels harvested from Essex showed a much higher concentration of poison than the soft-shell clam population growing in the same area.

The bioassay data plotted in Figures 4 and 5 indicate that the detoxification process is quite slow. The projected slopes of the plots in these figures show that the toxin is released more rapidly during the first phase of the detoxification process than during the latter stages.

This pattern is consistent in all shellfish areas monitored, regardless of species. The plots appearing on both figures display a similarity in slope.

The detoxification curves presented in Figures 4 and 5 for M. arenaria and M. edulis were obtained during the latter part of September to the end of October. It would seem quite reasonable that infestations that occur during the early or late summer would be detoxified at a faster rate due to the warmer environment and the attendant increase in pumping rates.

Summary

On September 14, 1972, the Massachusetts Department of Public Health initiated the first in a series of actions which prevented an outbreak of paralytic shellfish poisoning (PSP) that could have reached epidemic proportions. Actions were initiated before any sickness was reported. Eventually 26 illnesses were reported and verified. Of these, two were severe and required respiratory supportive treatment.

The poisonings that occurred are associated with an abundance of the planktonic marine dinoflagellate *Gonyaulax tamarensis*. The presence of dinoflagellate in abundance ("bloom") in coastal waters is often known as red tide. Unlike other natural disasters, an outbreak of PSP is impossible to predict. The recent outbreak of PSP in the State of Massachusetts is the first documented incident in Massachusetts recorded history. The poison associated with PSP has no known antidote. Consequently, the treatment is largely symptomatic. The poison synthesized by *G. tamarensis* is 50 times stronger than the paralytic poison curare, and as little as 500 micrograms of purified poison can be fatal to man.

Bivalve shellfish such as mussels and clams, when feeding on certain species of marine dinoflagellates, strain them from the water, digest them and accumulate their poison. A toxic shellfish is virtually indistinguishable from one which is non-toxic and the poison does not appear to harm the shellfish.

After several days of intensive monitoring, the Division of Environmental Health identified some 2,800 acres of shellfish harvesting areas as contaminated by *G. tamarensis*. The international standard for PSP in shellfish is set at a level of 80 micrograms/100 grams of shellfish meat. Levels in the 5,000-10,000 micrograms/100 grams range were found in certain species.

The degree of hazard posed to the consumer can best be grasped by relating the number of clams needed to give a lethal dose of this toxin. As previously stated, Tennant found that fatalities occurred from the consumption of shellfish containing 456 to 1,100 micrograms per 100 grams. The average drained meat from the soft-shell clams submitted for bioassay from the contaminated North Shore area weighed approximately 10 grams each. Therefore, since these clams contained some 4,000 micrograms of toxin per 100 grams of meat, during the initial days of monitoring, it would have been necessary to consume only three clams to exceed the higher (1,100 µg/100 gm) lethal human dose reported. It is recognized that a wide tolerance range to this toxin exists among individuals. However, even if the lethal dose reported by Tennant is underestimated by 500%, still only 15 clams would have to be consumed to exceed this adjusted lethal dose.

Prompt action by the Massachusetts Department of Public Health in ordering closures to harvesting, the sale and distribution of all shellfish, and the embargo of all shellfish importation and exportation undoubtedly prevented significant numbers of illnesses and fatalities.

Acknowledgements

The authors wish to express their appreciation and gratitude to the staffs of the Massachusetts Departments of Public Health and Natural Resources, local agencies, the State of Maine and the Canadian government for their collective assistance and cooperation during the emergency.

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Appendix 1

"A girl of 20 years, who had eaten too well of mussels, felt so sick as soon as she entered her home, that the assistants thought she was going to die. She had nausea, fever throughout her body, precordial distress, difficulty in respiration, accelerated pulse, and, added Mentzelius [the original author]: Totum corporis adeo rubrum erat ac si panno coccineo obductum esset. [The entire body was very red as if it had been covered with a scarlet cloth.] There were convulsive movements which did not allow an instant of repose to the sick girl; she was given tea with some spoonfuls of oil of sweet almonds; vomiting was provoked with a feather; she brought up the mussels, and all the food taken during that meal. Then she was immediately relieved. There remained nevertheless the heat and the thirst during the night. The menses, which had been delayed fourteen days, appeared, and health arrived." - Cited by Chevallier and Duchesne, 1851.

2

"Near the head of this arm [of a cove] they stopped to breakfast on the morning of the 15th where the people finding some good looking mussels about the rocks and shores, boiled a quantity of them. . . but unfortunately for them. . . these mussels proved to be of a deleterious quality as all who had ate of them in any quantity were, soon after they embarked, seized with sickness, numbness about the mouth, face and arms, which soon spread over the whole body accompanied with giddiness and general lassitude; this was the case with three of the crew of the Discovery's boat. . . One of them, John Carter puked a great deal, and found himself so relieved by it that he kept pulling on his oar till about one o'clock when the whole party stopped to dine: but in attempting to get out of the boat he was so weak and giddy that he fell down and he and the other two were obliged to be carried to the shore. On this, Mr. Johnstone instantly directed a fire to be kindled and plenty of warm water to be got ready as soon as possible,

1914

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that each of them might drink a sufficient quantity of it to operate as an emetic... but, before it could be got ready, John Carter became very ill... his pulse became weaker and weaker, his mouth and lips appearing black and his face and neck becoming much swelled together with faintness, general numbness and tremor. Under these circumstances he gradually sank without much struggle and expired just as soon as they were offering him the first draught of warm water which he was unable to swallow, and this sad affair happened within five hours from the time of his eating the mussels." - From the diary of Mr. Menzies, naturalist and surgeon to Captain George Vancouver's expedition to the Canadian Northwest.

- Cited in Prakash, Medcof and Tennant, 1971.

"Following a severe storm in July 1914, George Cotton found 45 helpless young black ducks (Anas rubens) on the beach at Barachois, Que. He placed these in a poultry pen and made his 14-year old son, Patrick, responsible for feeding them. One day Patrick dug some soft-shell clams from the river at Barachois, opened them raw, and fed the ducks the softer parts ('bellies') by hand. The boy ate some himself. After about 15 min Patrick noticed that some ducks were lying on their backs, dead, and that others were behaving strangely. At the same time he began to suffer from stomach ache, headache, numbness of the face and arms, and shortness of breath. He made his way to the house and was able to explain to his mother that he was sick from eating clams before he collapsed on the kitchen floor. Patrick's mother made him vomit by having him drink warm milk and mustard. Patrick recovered and gave this case history in 1966." - Cited in Prakash, Medcof and Tennant, 1971.

Addendum

PSP Task Force

Following the lifting of the general ban against the harvesting and sale of shellfish in Massachusetts, William J. Bicknell, M.D., Commissioner of Public Health, appointed a short-term task force to study the problem of paralytic shellfish poisoning and to submit a program for surveillance and control in Massachusetts.

Chairman of the task force is Bernard B. Berger, Ph.D., Professor of Engineering and Director of the Water Resource Research Center, University of Massachusetts (Amherst), and a member of the Public Health Council. Members of his group are: John H. Ryther, Ph.D., Woods Hole Oceanographic Institute; Norton H. Nickerson, Ph.D., Department of Biology, Tufts University; Mr. Richard H. Loring, Aquacultural Research Corporation, Dennis; Prof. Charles S. Yentsch, Director, University of Massachusetts Marine Station, Gloucester; Arthur

Ippen, Ph.D., Director, Water Resources and Hydrodynamics Laboratory, Department of Engineering, Massachusetts Institute of Technology; and N. Bruce Hanes, Ph.D., Department of Civil Engineering, Tufts University.

In a letter to Prof. Berger, dated October 31, 1972, Dr. Bicknell stressed that the guiding principle for the working group should be a rigorous protection of the public's health. He also indicated that, within that framework, any proposed plan should seek to affect industry only minimally. Should a choice have to be made between individual health and safety and economic damage to industry, the choice shall always be in favor of protecting health.

Report of the task force will be ready before the late summer months when outbreaks of red tide might occur.

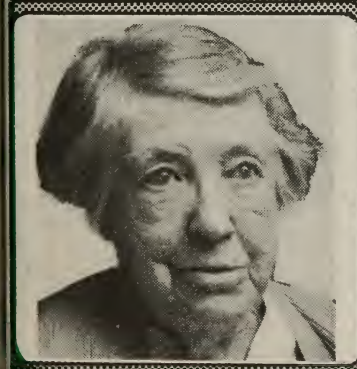
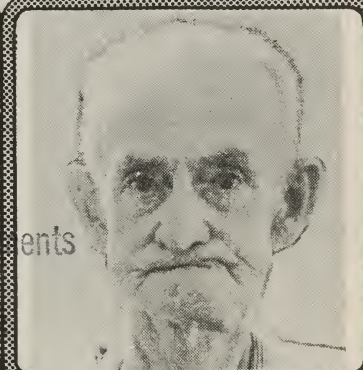
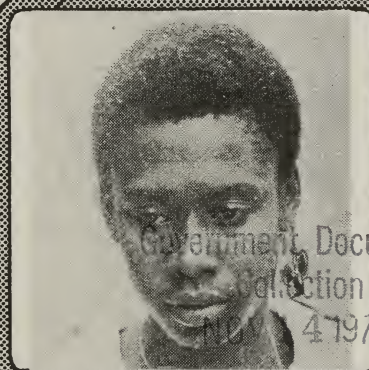
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COMMONHEALTH





Cover - “. . . little boxes framing pleading faces, worried faces; faces of children, mothers, fathers - men and women asking for help.” (See page 23.)



Massachusetts Department of Public
Office of Health Education
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Boston, Massachusetts 02111

Publication of this document approved by
Alfred C. Holland, State Purchasing Agent.
No. 15

Second-class postage paid at Boston, Mass.

COMMONHEALTH

volume 2 number 3 summer 1973

Quarterly publication (Winter, Spring, Summer, Fall issues) of the
Massachusetts Department of
Public Health
600 Washington Street
Boston, Massachusetts 02111

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Health Systems Regulation Administration

Foreword

Pearl K. Russo, Editor

Governor Sargent's proposals for the reorganization of the Secretariat of Human Services, under House Bill 6120, the Human Services Reorganization Act, have evoked wide discussion among large sections of the population. Health workers, who are daily involved in the delivery of health care and services to the people of the Commonwealth, have expressed a keen interest in knowing more about the proposals under which the Department of Public Health, in its present form, will be abolished and its traditional functions allocated to three distinct departments.

In brief, the following changes will take place if H. 6120 passes: 1) The Division of Food and Drugs will be transferred to the Department of Consumer Affairs; 2) the Division of Environmental Health and the Pesticide Board will be transferred to the Department of Environmental Affairs; 3) most of the direct patient services, including those provided by six of the seven Public Health Hospitals, will be transferred to the Community and Mental Health Administration within Human Services; and 4) the Massachusetts Hospital School and the Handicapped Children's Services will be transferred to the Rehabilitation Administration within Human Services.

A new entity, the Health Systems Regulation Administration, will encompass the remaining health surveillance and control functions of the present Department of Public Health (the State Laboratory Institute, Tuberculosis Control, Communicable Disease Control), and the increasingly important aspects of health regulatory procedures. To these functions of health planning and statistics, regulation of hospitals, nursing homes and home care agencies, and health facilities development through certificate of need, will be added Medicaid policy and payments, now in the Department of Public Welfare; rate setting and regulation of health insurers; and the licensing of individual members of the health professions.

The Annual Meeting of the Massachusetts Public Health Association, held in Boston on March 29, 1973, considered the question: "Reorganization - What does it mean for Public Health?" Because of the importance of the subject, and of the urgent need to bring information and clarity to the public discussion, COMMONHEALTH is publishing the major addresses presented at that meeting. Limitation of space does not permit the inclusion of the afternoon panels.

**Reorganization's Goals for
Public Health in the Light of Changing
Federal Priorities**

Governor Francis W. Sargent

The year 1973 may well be recorded as a year of revolution and change in government at all levels. On both federal and state levels, officials are outlining dramatic departures from the old ways. Greater financial flexibility, an emphasis on local control and demands for more efficiency are the hallmarks of all of these efforts.

On the national level, President Nixon has submitted a highly controversial budget....

Essentially, the President has offered a budget that returns the decision-making power to the state houses, to the city halls and town halls of America. By eliminating categorical grants and replacing them with special revenue sharing block grants, the President has given local officials a greater role in determining which programs make sense for them and which should be continued.

On the state level, we are attempting to reach a similar goal through reorganization. Let me be more specific. In the reorganization of Human Services, we are attempting to change the way that government operates. We are trying to return power to the local communities.

Basically, it is our belief that the state should provide the funds, set the standards, and review the programs.

But local officials should determine local and regional needs. The state should not end up as an obstacle to local initiatives. But rather, we should make every effort to make these local claims succeed.

Let me give an example of what I mean. It should be the state's responsibility to operate a hospital that will draw patients from the entire state. State officials should license and regulate these facilities but local communities should have a major role on where, obviously, these hospitals are located.

As another example, the state should determine eligibility for financial assistance programs. Clearly, such eligibility should not depend upon where the person lives. But there should be local offices to administer these programs and help the persons who are truly in need...

So it is time for change. We must begin to reach out and return government power and services to the people. But this will not be easy. It is clear that there are a great number of people in the Commonwealth who do not want change, change of any kind. Generally, these are people who have a vested interest in the system as it presently operates....

The proposals that I have submitted to the Legislature are my signal to these people that I am prepared to fight for change, and prepared to fight for this reorganization.

These proposals say "yes" to services and "yes" to giving power back to the communities. They say "no" to keeping programs that do not work. And they say "no" to the notion that there is some mystical expertise in the State House that can solve everybody's social needs. These proposals are blueprints for returning government to the local and regional levels where it can be most effective. This legislation will create regional and area councils. These councils will not be mere advisors, they will be the actual people who plan and implement programs.

Now, reorganization is nothing new to Massachusetts. In fact, elected officials have paid lip service to it for a great many years. But what I propose is more than the usual reshuffling of boxes on an organization chart. It is a major revamping of the bureaucracy. A realignment that says that the people in the field know best what is needed. It says further that local communities can accomplish their goals if they are given the tools to meet their needs.

But what are the tools we can provide local officials? First, we shall provide you with budgetary and personnel flexibility. The state will continue to establish



guidelines. But area and regional directors will have the power to transfer funds and staff from one program to another. As a result, we will no longer be faced with situations in which too many people work at one place and not enough at another.

Right now, for example, in Western Massachusetts, we have two hospitals less than 10 miles apart. Yet they do not coordinate their activities. In one institution, there are more than 1,100 inpatients with a very small staff. In the other hospital, there are 400 staff personnel taking care of only 65 inpatients. Yet today, because one hospital is in Mental Health and the other in Public Health, we cannot transfer staff.

This is exactly the type of thing that will change under reorganization. We will give sufficient flexibility to the communities to insure that such waste does not occur anymore. But the new flexibility will not end here. Reorganization will create within Human Services a state equivalent to the Federal Intergovernmental Personnel Loan Act. Reorganization will permit human service agencies to lend their personnel to municipal and private agencies to assist them in meeting their needs.

There is one further facet of reorganization that deserves, I believe, special mention. As we change the way we operate, as we shake up our agencies and departments throughout state service, we must not lose sight of our true objective.

What we are really trying to secure is better service for the public. We are trying to insure that an individual in need will get the aid he requires - and that he will not be defeated by the convolutions of bureaucracy.

To make sure the individual receives the aid he needs, he deserves, we are planning to strengthen the role played by case managers. These managers will be on the side of the private individual, not the agency. And they will serve not to protect agency lines, but to cut across them....

Right now government - at the state

and federal level - is overcentralized, in my view. Power is excessively monopolized by isolated officials who are out of touch with the problems of individual people. I believe we are changing this with the reorganization of state government. We are moving away from centralized control and towards flexibility. And we are moving from adequate service, I hope, to very much better service.

How the Reorganization Plan Could Move Us Towards These Goals

**Peter C. Goldmark, Jr., Secretary
Executive Office of Human Services**

Let me try, first of all, to say a word about how I look at the whole proposition of reorganization. You're caught in a real dilemma even trying to discuss it. The temptation in any large plan of any major undertaking by government - this is also true of some people not in government, especially when you've invested a lot of time and a lot of effort in it - is to overdescribe it. You wind up giving the impression that it is oversized and pretty soon you'll find that you've oversold it. I want to try to emphasize that the key way to look at reorganization is as an opportunity. It is an opportunity to take a few steps forward in the way we organize ourselves to conduct the business of government. I don't think it either is or should be offered as a panacea to all the ills of the state or the country. There are many other elements involved: politics, the people you have administering these

programs, the availability of financial resources, not only at the state level but at the federal level. So I want to state in the beginning, and then I am going to state it at the end after I have pointed out some of the structural changes we are trying to make, that for me the question of reorganization is to try to improve the structure, to try to sharpen the tools or to acquire new tools when we don't have good ones, to accomplish certain program goals or to expand the limits of how we now move in this government.

Array of Powers

We look around the state apparatus as it now exists in the health field and we find a vast array of health powers and resources. The Department of Mental Health runs a dozen State Mental Hospitals and a score or more of community centers and child guidance centers, many of them in association with private groups. The Department of Public Health itself runs seven large hospitals. Both Mental Health and Public Health have large alcoholism programs, although the location by law of the coordinating responsibility for alcoholism presently rests in the Department of Public Health. The Office of Consumer Affairs contains six independent Boards of Registration, all closely associated with the delivery of health care: nurses, physicians, pharmacists, dental examiners, nursing home administrators, psychologists. The Secretariat of Administration and Finance contains the Rate Setting Commission,



which presides over the process of reimbursement for institutional and other providers. The Department of Welfare runs and has been making increasing progress in the past year in running Medicaid, a gigantic third-party health insurance program. The Department of Public Health possesses and administers a whole complex of regulatory powers, licenses facilities, passes on the appropriateness and necessity for expansion of capital facilities or changes in the service mix of facilities in the private sector. The Division of Insurance has some limited powers of regulation over private health insurance benefits, the Blues and other private third-party insurers, a large, and to this date, fairly unexplored area of state government. At the other end of the spectrum, the Department of Public

Health has, through the State Laboratory Institute, emergency powers to protect the public health and is responsible for a series of more traditional public health programs, such as communicable disease and so on. Within the Office of Human Services, we have the Office of Comprehensive Health Planning, that agency which has a federal mandate to prepare statewide comprehensive health plans, and which is one of the key mechanisms not only for statewide health planning but for statewide representation of citizens, particularly consumers, to learn their points of view.

Out of this welter of agencies and powers and separate programs, we are trying to identify four main groupings. The first one encompasses those health activities primarily related to environmental concerns. In addition, we have the direct delivery of health care, epidemiologic or health surveillance functions, and regulation of the health industry.

Environmental concerns rest primarily in three units within the Department of Public Health: the Bureau of Community Sanitation, the Bureau of Water Supply and Water Quality, and the present Bureau of Air Quality Control, from which the state's present Air Pollution Control Program is run. Are we jeopardizing the health of the public by proposing that these units be transferred to an agency which is concerned with environmental health rather than with

public health? I don't believe so. One hundred years ago with the growth of modern cities, the state worried about major typhoid and cholera epidemics spreading through inadequate water and sewage systems. Today, we face radically different problems in terms of environmental health. Industrial combines gobble up natural resources and spit out chemical wastes. We face a whole series of economic and ecological crises. We face questions which are different in character and which require entirely different approaches. How swiftly should we allow industry to chew up irreplaceable resources? Which toxic effects of processes and activities that we now consider an integral part of our daily economic and social lives, whether it is the generation of electricity or the incineration of garbage, must we accept and which can we not afford to accept? The question of what percentage of sulphur to allow in Texaco's fuel oils goes far beyond the field of health. Our proposal is that those questions can best be addressed by an agency of environmental affairs, where health questions can be considered as part of a larger environmental strategy.

To handle the remaining state health powers, we are proposing two new administrations. The Community and Mental Health Administration would combine under one roof almost all the direct functions of health care delivery. These would include the major institutions and the major community programs

of the Departments of Mental Health and Public Health that deliver direct health care. It would take in the court clinics, the Drug Rehabilitation Program, and the Alcoholism Programs, with the inpatient clinics and the new community detoxification centers that now exist in both Departments. The Community and Mental Health Administration would include the Maternal and Child Health Programs. It would also include the two Soldiers' Homes, which are presently independent....

Responsive Structure

In putting community and mental health services together, we are after essentially one or two limited objectives, and I am trying to be as frank about them as I can. The first aim is to get a responsive, decentralized operating structure. It is my feeling, after a year and a half on this job, that the present state government is poisonously over-centralized. Decisions that should be made by those whom we would like to hold accountable for operating programs are not made because these individuals are not allowed to make them. Instead, they are made by faceless bureaucrats in central offices, very often in either Administration and Finance or in the two Ways and Means Committees of the Legislature. Now those are fighting words in this state. I said them to the individuals in all those agencies and committees I mentioned and I am not, therefore, afraid to say them to you. I believe them.

I am very fond of talking about a program I visited in western Massachusetts called Copley House, which now houses five adult male retardates. Although this example is not from the health field, it has many parallels. These five retardates had spent, before they came to Copley House in Pittsfield, a total of 150 years in Belchertown. Consider what those 150 years have meant either in terms of their human condition or in costs to the taxpayer. All of them have learned to read and write since they moved to Copley House. All of them now hold jobs; that means all of them are paying taxes. The cost per year to the state for group residence is about one-fifth of the previous cost of housing them in Belchertown. The benefit to them in terms of their development as human beings is immeasurable. My feeling after visiting Copley House was that the benefit is very, very great, and I would take that immeasurable gain over many more precisely measurable advances with which I am now familiar. That program in Pittsfield, and this is a strange thing to say, is illegal because the returned Peace Corps volunteer who was the housefather in that house, and his Filipino wife who was the house-mother, were working in job slots which are coded for the Belchertown State School. Under the laws and administrative procedures of this state, these jobs cannot legally be assigned outside the institution. That means several things. First of all, it means it is hard for those who would like to move in the

direction of less institutional care to undertake such changes. Second, it means that we as a Commonwealth, as a body politic, divert and occasionally spend enormous amounts of political and administrative energy, sometimes just plain good will, trying to find the long way around through a maze when the easy way has been right in front of us all the time. . . .

System "Upside Down"

I have spent much time on this one aspect because, in all honesty, I feel reorganization to be one of the most important opportunities and one of the most important changes we can make in the way in which the state government works. It's abstract, it's difficult, but I think the present state system is upside down. The decisions that affect the operation of programs are made at the top by those who don't have the information, don't have the sense to be vaguely right rather than exactly wrong. Second, this concentration at the top means that the central agencies cannot perform their proper role. That is the second part of what we would like to achieve through reorganization. I defy anyone in this room to find for me in any Human Services agency an identifiable, well-organized unit of state government which, on a sustained, systematic basis, has as its primary function, and really does it in a meaningful way, the setting of minimum standards, the enforcement of those standards on local programs and the provision of professional

guidance and technical assistance to local programs that may need them.

Let me go on from there to additional points. We do think this reorganized structure will allow us to use our resources more effectively. The Governor gave you a couple of examples. I will mention some others. We have two Departments, the Department of Mental Health and the Department of Public Health; each one now treats relatively independently large groups of people with alcoholic problems as part of the Alcoholism Program. We spend somewhere close to \$10 million a year through our mental health system. We provide many types of medical services for patients, some of which could be performed through our public health hospitals. Many of these hospitals in the public health system are now either underutilized or not being tapped to provide these services. Our estimates are that as much as 10 percent of the present total amount spent on direct and particularly inexpensive medical services in the mental health hospitals could be saved by bringing the two systems together.

We also want to recapture the third-party payments to which the state is entitled. Our state hospitals now recapture funds; by recapture, I mean get reimbursed from Medicaid, Blue Cross, and other third-party insurers. There are hospitals in the state system which now recapture up to 70-80 percent of their total expenditures. We have others

which recapture as low as 20 percent. Where's the difference? Taxpayers are making up the difference. Why worry about the taxpayers? I don't think, nor do I believe the Governor thinks, and I question whether the Legislature thinks, that this state is politically ready to consider any sort of tax increase. That puts a premium on devising a plan that can use most wisely the resources we have. It is very clear to me that the federal administration has no intention whatsoever of increasing the level of resources available to domestic programs. That is why I think it is very important to be aware of all aspects of these proposals which concentrate on using our present resources more wisely. The present resources may be the only ones that we have at our disposal to address the problems that we want to meet.

Let me talk for a minute about the other major agency we are proposing, the Health Systems Regulation Administration. This is in some ways the most daring element of the entire reorganization plan. It proposes the creation of one central agency to regulate and monitor the health industry in this state. We are talking about putting together powers which are scattered all over the government: the power to set rates, which is now A & F; the powers to set standards for the licensing of professional personnel, which are now in the autonomous Boards of Registration; the power to regulate third-party insurers;

the power to approve or disapprove changes in service mix and in capital facilities by private providers; and the Medicaid Program. The latter can, I think, be used more aggressively than it has been as a force to restructure the delivery of health care in this state. Finally, we are talking about the powers of the Office of Comprehensive Health Planning, which is one of this Commonwealth's strongest arms of citizen input into health planning. Right now, nothing that the people in the Office of Comprehensive Health Planning and the citizens' boards and the B Agencies say affects how Medicaid is used in their areas. Nothing they say affects what the Division of Insurance sets as minimum regulations or standards for allowing someone to sell health insurance in Massachusetts....

One point only: if through coherent management and utilization of our health system we could reduce the average length of days that citizens in Massachusetts spend in hospitals only to that which is the average for the rest of the country, we would be saving approximately \$120 million a year. That's a level of change, of saving and a wider use of resources that would make no-fault insurance look like peanuts.

The problems we have now are legion. I have a series of examples here, but I'd rather pick only one because it shows some of our present problems with enforcing any type of quality in the

private sector. The Department of Public Health licenses and certifies nursing homes and hospitals. When inspections reveal inadequate care, the Department can revoke or threaten to revoke a license. I can see this as roughly the equivalent to dropping the atom bomb on someone or not dropping it. There don't seem to be very many steps in between that are readily available. But if the Department of Public Health does take action, the Department of Public Welfare cannot always take the patients out of a facility whose license has been revoked and find a satisfactory alternative for them. Welfare cannot always cease payment without in some cases going through a very different legal procedure. This leaves us with a ridiculous situation. The Medicaid program in Welfare has the best sources of information about the demand for nursing home facilities; Rate Setting sets the price; the Department of Public Health grants or takes away the license. Nobody has the tools or the clear responsibility for which they can be held accountable for the quality of what does go on in that nursing home....

I said I would end by repeating the following: The question of reorganization for me is a question of structure, a question of tools, and a question of opportunity. What do we all want to get out of it? What are the two, three or four steps we want to take forward? We can't change the universe with it, but we don't have to stand around and

say it's too complicated, we can't do anything with it. Like every major opportunity for change that presents itself, the question of whether we get any, whether we are able to move forward a few steps, is dependent partly on our willingness to separate what is more important from what is less important. Very often when I talk of reorganization, I get the reaction that this is an inordinately complicated task. That is true in a sense but, to a certain degree, we decide, you and I, how complicated it all is. The Legislature receives 6,000 bills a year. You and I don't know what is in all of them. Senator Backman doesn't know what is in all of them. The legislators pass, I suspect, maybe one or two thousand of those bills. That can seem terribly complicated. But again there is a handful of maybe six or ten that are important, the ones on which to focus. I think that is the way to approach the reorganization problem. We will do well in this state, not only in the area of health but in other areas, if we can debate the central points. Then we can decide which way we want to go and take those steps that we see as opportunities, and realize that they are only steps. We will have to move beyond them and wisely use the framework we have created for ourselves. We must appoint able and wise people in order to develop good policies and important programs to administer them well, and to realize the potential of the frameworks and structures we have created.

Panel of Discussants



**John F. Smith, Director
Department of Public Health
Worcester, Massachusetts**

Reorganization of major health services of the Commonwealth poses many perplexing shifts of emphasis. At the local level, there is concern that the priority of health in environmental health will be seriously downgraded by the proposed transfer of Food and Drug to Consumer Services and Environmental Health to Natural Resources.

It should never be forgotten that the great victories against typhoid fever, malaria, yellow fever and other infectious diseases were won by the application of environmental management techniques. While much has been accomplished, there is much to be done. Food-borne illnesses still constitute a major community health problem as more than a million cases occur annually in the United States.

Rat-inflicted injuries continue to be a source of concern. Flaking leaded paint, deteriorating housing, and the ever-present litter and garbage are afflictions that spell out the quality of life exactly as it is without using the politically popular expression of "environmental quality."



Increasingly these days, we hear concern about the quality of the environment and the need to restore it. Restore it to what and for what purpose? Indeed, the health consideration of environmental quality is strongly underplayed, if not ignored, in most of the current urban planning and comprehensive health planning activities at all levels of government. In fact, the cause of human health has often been forgotten in a mad rush to protect trees, birds and fish life.

The traditional health services of a city that provides local service at the local level undoubtedly will not be greatly affected by reorganization. If reorganization does happen to provide services to supplement ongoing programs, then

this is to the good. At the local level, there is a supply of manpower and expertise that up to now has not been recognized or reckoned with in reorganization plans.

Fragmentation of the present Department of Public Health with dispersal of activities is sure to create problems of where to turn for assistance from the state, especially when we must penetrate two layers in order to reach the top. Whereas now there is a central agency, with reorganization there are at least five different agencies that are charged with responsibilities of concern to local people looking for guidance and assistance.

Gaps in Assistance

Traditionally, those communities that have been providing local service can and will continue to do so. They are the communities that are affluent, those with imaginative leadership where health concerns are given deserving priorities, and those communities that will recognize the gaps in state assistance and do something about it. Where will the money come from? Hopefully, state subsidies, revenue sharing and, if necessary, from tax dollars - using the principles of home rule in providing services not inconsistent with the state constitution or laws enacted by the General Court.

In other communities where the reverse is so often true, there will be a greater disparity than heretofore and health promotion activities will continue to disintegrate.

Positive Factors

There are some positive factors that should be considered by those who hold to traditional health services. Public health did not grow and prosper by a "stand pat" attitude. Innovation has always been a tool as it is with reorganization. Traditionally, we find problems seemingly without solutions. With the provision of direct services through statewide agencies, perhaps health services may be extended to many of those who need health care where now there is none or very little, and for which some third-party payer is available to provide benefits....

Reorganization might mean greater direct health care benefits at the local level, lesser concerns for environmental health matters from state agencies, and confusion as to where to obtain speedy assistance when it is needed most. Without doubt, there will be gaps in service that will have to be filled at the local level. There may also be a further isolation of those small towns that have traditionally avoided meeting their health obligations.

**Senator Jack H. Backman, Chairman
Social Welfare Committee
Massachusetts General Court**

This is not my speech (holding up document). This is the bill for the reorganization of Human Services. I would like to say that I probably have an advantage over everyone on the panel, and everyone in this room, because I don't believe that there are more than a half a dozen copies of the bill itself in the Commonwealth. I would like to begin by commenting on one of the remarks of the Secretary of Human Services with regard to that very poignant and sad story about the retardates who live in this little place out in the western part of the state. I want to make one thing perfectly clear, and you must all understand it, the real problem in regard to people in a situation like that of the retardates, or of the many emotionally or mentally ill adults and children in this Commonwealth over the last 50 or 30 years, was not due to the bureaucracy or the administrative abilities of any person in charge of a particular program. It was due to the utter irrationality, insensitivity, perhaps stupidity, but certainly due to the lack of commitment of this Commonwealth, and perhaps of the nation, to the needs of the sick, the emotionally disturbed, the poor of our Commonwealth. Let it be clear to everyone that reorganization alone is not the answer to those people's problems, but the solution requires all of us to do



something within the present system or in a reorganization.

In the few minutes that I have to speak as a panelist, I want to divide what I have to say into three parts. First, the procedure of this reorganization - and I am for reorganization of the state government. I think that the present governmental structure is soft every place you touch, and it needs change. Second, we have just a few minutes to talk about a small part of the substance of this bill. Third, I want to talk about the commitment of our Commonwealth.

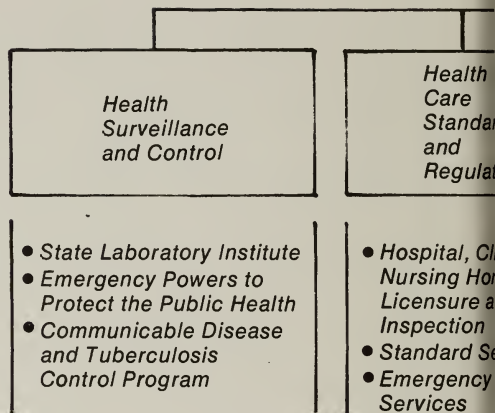
In regard to the procedure, we are not going to have a show of hands; but perhaps almost everyone in this room is in agreement that a reorganization of government statewide, locally, nation-

ally is in order and that it should be a continuous procedure of looking at what we have and changing it for the better. Perhaps it is time now for a complete change and not a reversal of our present system. However, what concerns me greatly is that everywhere that the Secretary or the Governor speaks, the deadline of July 1, 1973 is the focal point of the reorganization....

Just consider the thousands of positions that are to be eliminated, the thousands of new positions to come in. I have a list of 2,650 new positions to be created in Human Services alone. How fantastic to think we can accomplish this task by July 1. The Social Welfare Committee will consider this plan among other reorganization plans. How can we assume the impossible task of studying the 800 bills before us as well as the reorganization of Human Services? How can we do both at the same time? Over and beyond the Legislature's own problems of time, are the departments involved in Human Services ready for reorganization? Do they have implementation plans for a smooth transition from the present system to a new one? To enact legislation that cannot be implemented, to take hasty action under pressure from the Governor would be foolhardy, a disservice to the citizens of the state and gross negligence on the part of the Legislature. . . .

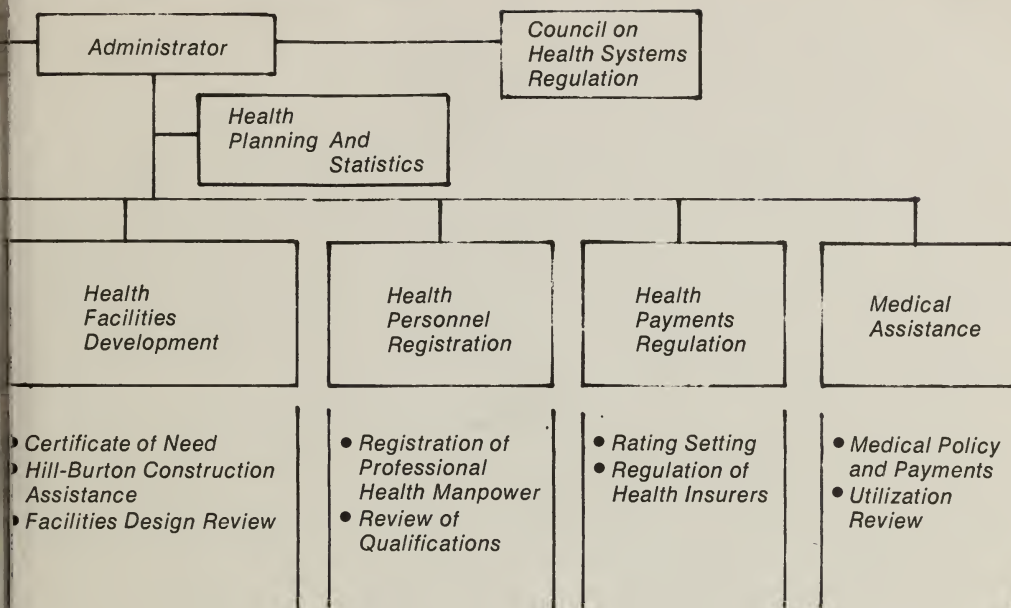
In regard to the substance, you know this particular bill has about 900 and some odd main sections, and some of

Advisory
Councils



these main sections have as many as 125 subsections. We talk about regionalization and area boards. The bill itself talks about four to ten regions; it does not say six or eight or ten but four to ten regions. Then it merely says area boards but with no specificity. How are we going to adjust the budget and the personnel to this kind of a situation? I have here with me at least three different maps of regional organizations put together by Human Services. In addition, we have those for Education, Public Safety and for the Office for Children,

Systems Regulation Administration



just to name some from the top of my head. What are these regions going to be? We have to think about that which is part and parcel of reorganization.

Everywhere I go, I hear and read in the newspapers, in the editorials, of the need for local control, local supervision, bringing government down to the local body. This bill doesn't say so. This bill substitutes for the present innocuous Mental Health Area Boards a set of innocuous area boards under the new Office of Human Services - 25 people,

eight or ten of them providers with conflict of interest. The Governor has said that he wants to do more than allow these boards to advise, but all that this bill gives them is the power to advise. Perhaps in some of the vague other provisions there is a power, and I might say a vague power. However, the only additional power is a veto over the choice of area director and then the power ends. Assuming they have power, how can the providers be part of the administration of a system that is supposedly controlling and regulating them?

In the Secretariat of Human Services- and I am talking about the substance of the bill- the Secretary has the power to make rules and regulations for the administration of the Department of Human Services. The bill also says he can delegate this power to any administrator, officer, employee or agency in the Commonwealth. So within that, perhaps he can give the local board some powers to make rules, to make regulations, to do many things. He could give it to anyone in this room who works for the state as well. I don't know if it is constitutional for the Legislature to give the Secretary this broad rule-making power and within the same piece of legislation to say that he can delegate it to anyone who works for the government in this Commonwealth or any agency. I'd say that aside from its legality, it is inappropriate....

There are main subdivisions of the Office of Human Services as I am sure most of you know. I want to take one of them to point out the need for tightening this statute. The Rehabilitation Administration has four divisions within it. Yesterday was the first time that I had seen these four divisions: 1) the Division of Developmental Disabilities, 2) the Division of Handicapped Children, 3) the Division of Vocational Rehabilitation and 4) the Division of the Blind. Now here is what is strange. The definition of the Division of Handicapped Children includes all those persons who

have developmental disabilities. The question is, who is going to administer developmental disabilities? Will it be the Office for Children, the Division of Handicapped Children, or the Division of Developmental Disabilities? The definition of both developmental disabilities and handicapped children also includes blind people, and yet we have a separate section - the Division of the Blind. Where is the authority, where is the supervision, where are the regulation and control, in which one of these three? Now all three of these divisions have strong powers to put together programs of care, medical attention, rehabilitation, day care, all the broadest kinds of programs. Then we have the fourth division, Vocational Rehabilitation. I don't know what this bill does as far as putting the administration in the hands of one or another of these divisions, and I am sure no one really knows how the powers and responsibilities will be allocated to these four new divisions. I might also say that the Division of the Blind has the same powers as the whole main administration. The subdivision, the Financial Assistance Administration, is the one that doles out the money to the people. The Division of the Blind not only has the power to administer the rehabilitation and the medical programs for the blind, but it also has the full power to give out the money. So before we even start, we have a new fragmentation of services, fragmentation that was supposedly to be eliminated.

The most important aspect of this reorganization is what I began with - the question of the commitment of this Commonwealth. Is there really a commitment to provide adequate human services to the children, to aid the people of this Commonwealth to develop to their full potential regardless of physical, emotional or economic disabilities? This is really the question. Does this reorganization and does this administration make a commitment to that goal? I say to you, merely by examining the reorganization in the context of the budget submitted, that it does not. We can't allow a sham and fraud to be put on our sick, our elderly and our poor by saying that we are reorganizing government to perform better services. At the same time, as many of you in this room know, various departments of this state were asked to put the budget together, and I'm not telling you any secrets. I was at public gatherings where the chief administrators of area boards stated they were asked to put together a budget for this coming fiscal year that would be less than the budget for the last fiscal year; and that was the prime consideration of the reorganization budget.

My office is full of letters of complaints from administrators from every part of this Commonwealth, administering every kind of human service program throughout Massachusetts, pleading for more personnel and more tools to do

their job. I was at a meeting of the Boston University Area Mental Health Board attended by legislators and many people from the public. It was not a secret meeting and the chief administrator said, "Please put more money in the budget to give us personnel for the new BU Medical Center, a \$15 million item that is going to be in operation beginning in 1975 or at the end of '74." He said it cannot open without the personnel. The budget doesn't provide for this.

Mail Drops

The Lindemann Center is still half vacant; and I say to you, if you want an exercise in futility, just walk in there and walk through those corridors, just test the doors, nothing more, just test the doors. At least one-half of the doors at the Lindemann Center are locked tight. There is nothing in them. Another third of those doors have names on the board, but the names are of the people who use them as mail drops, one day or two days a week.

The Boston State Hospital is dying. The Home Care Corporations under the Secretary of Elder Affairs is a great idea. The proposal read well in the newspapers; but when the Secretary came before a legislative group to explain the bill, he said the budget provides zero to implement new Home Care Corporations for senior citizens. If you merely put onto paper a plan you are

not intending to carry out, I don't consider that reorganization. It isn't enough just to restructure, you must have a commitment to carry out programs. The resources of our society must be allocated to do the job. Otherwise, I am not for this reorganization. Too many people will see it as another cop-out and another sham of our government.

Is the Commonwealth of Massachusetts ready to assume the role of providing these services, the human services? Are we ready to tell the public that we are going to give those services? We cannot say, as the Secretary said, this is not the year for new taxes. If this is not the year for new taxes and new allocations of money for these programs, then this is not the year for reorganization either. If you people in this room are not ready to assume, as middle-class American citizens, the burden that is required to put these services together, don't talk about this shuffling of figures from one department to another.

I sincerely hope that we are going to have a reorganization of the resources of this Commonwealth and of the nation for alleviating the human misery and deprivation and the illnesses of all the people of this Commonwealth, but the main thrust must be that we have to pay the price for it. If that isn't part and parcel of the reorganization, then I say that the proposal doesn't mean anything....

**Hubert E. Jones, Co-Chairman
Coalition for Human Services
Chairman, Task Force for Children
Out of School**

First of all, I believe that reorganization of state government in the Commonwealth is long overdue. There is no question that we urgently need, in the field of human services, a reordering of governmental functions into a more rational organizational structure in order to increase operational efficiency, reduce costs where feasible, expand and improve human services and achieve greater accountability of public administrators to consumers and the public at large. The establishment of a cabinet system which eliminated direct accountability of state agencies to the Governor makes good sense. The move to acquire greater administrative command over the human services conglomerate is a necessary requisite for organized reform. In short, the Governor has made a great contribution to the Commonwealth by not shrinking from his large responsibility to pursue reorganization of state government with all deliberate speed. Therefore, my quarrel is not with the thrust toward reorganization because it must be achieved. My quarrel is focused on much of the substance of the plan for reorganization of Human Services as revealed in the legislation submitted to the General Court last week. As it now stands, that plan is not in the public interest.

The reorganization plan for Human Services seeks to consolidate broad administrative power and control into the hands of the Secretary without the appropriate checks and balances needed to protect citizens against the misuse and abuse of such power. The plan is a classic example of administrative decentralization of functions and the maintenance of centralized control. The plan calls for the decentralization of administrative functions to regional and local areas through the creation of regional and area directors to be "controlled" by the Secretary through appointment and accountability processes. The plans for the establishment of regional and area human services councils embody the traditional prescription for citizen frustration and impotence. As proposed, these citizen councils would not have the power to approve regional and area budgets for facilities and programs, but merely "review and comment" on budgetary matters....

In fact, members of human services area councils would have less authority than the current mental health area boards, which at least have the authority to approve the annual state plan. Our historical experience in the mental health field has conclusively demonstrated that when citizen area boards have only "review and comment" authority regarding budgetary matters, then the door is left open to administrative abuse of power which victimizes consumers and the general public. Recent experience



has led the Social Welfare Committee of the Legislature to report out a bill that would give mental health area boards broader approval powers. Unfortunately, the Governor's legislation does not recognize the inequities of the past and the growing sentiment among citizens and legislators for the need to give members of citizen boards sufficient clout to protect the public interest, if these councils are to work....

Defenders of the Governor's proposal point out that our form of state government requires accountability through the Governor to the Secretaries. The Secretary is only accountable to the Governor. They claim that the public can always go to the Governor regarding

grievances and unresolved disputes with the Secretary. That kind of accountability process undermines the very intent and purpose of reorganization into a cabinet system which is designed to take such burdensome and unmanageable tasks off the shoulders of the Governor. Reorganization is supposed to move the operation of state government into the modern world. The realities of the modern world require a new accountability system between public administrators and consumers (the public) in a more direct fashion. This must be the cornerstone of any reorganization plan for human services.

The composition of the 25-member human services councils should be specified in the legislation and not left to regulations to be promulgated by the Secretary. Such legislation should guarantee that the majority of the members on the area councils be bona fide consumers of human services in order to avoid the domination of these councils by professionals assuming their citizen role. Hopefully, we have learned something about the dangers involved here through the consequences of professional dominance on mental health area boards.

I am also concerned about the potential conflict of interest involving the participation of providers on the area councils, particularly those providers involved in contractual purchase of service agreements with the Office of Human Services. This potential problem must be addressed. The proposed legislation calls

for five to eight providers serving on the area councils. I believe that eight providers, which amounts to about one-third of the council membership, should be reduced to four providers. There is some obvious merit to having provider input as a part of the council process - but one-third involvement is out of step with a credible citizens' accountability process.

Appointment Power

Under the proposed legislation, the Secretary would formulate procedures and guidelines for selecting regional representatives to the state human services council and area representatives to the regional councils. He would appoint the majority of these two councils and all members of the area councils. It is important to know if procedures and regulations regarding the selection process will be subject to the Administrative Procedures Act, which would require public notice and public hearings. This is now unclear. The appointment power could be used to create a company union. I am aware of the fact that many human services administrators now view organized consumer groups as the consumer establishment - unrepresentative of the real consumers of services. We must make sure that the appointment process and related regulations and procedures are not used to establish a consumer constituency that is not tied to organizational bases. I am not recommending that the new citizens councils

be populated by the same old faces because we, indeed, need to broaden citizen involvement and participation in this state. However, appreciation and respect for organized consumer advocacy should not be neglected and "messed over" in the process of selecting members for citizen councils.

Any reorganization plan which is seriously concerned about public accountability of administrators must address the critical need for legally guaranteed access to information in state government, and particularly in the human services bureaucracy. Those of you who have read Suffer the Children, published by the Task Force on Children Out of School, know about how one citizens group was unable to get access to public information in the Department of Mental Health. Citizens cannot hold public officials accountable for their performance if they do not have access to information. Citizens cannot constructively review or approve budgetary or other matters unless they have access to substantial information that is currently withheld from them....

I am in agreement with the concept of client advocacy in the human service field. However, I believe that the proposed system of case managers in reality amounts to public relations gimmickery because there will not be very many case managers for each area or region in relation to the size of the

population base. It will amount to a token gesture as now planned. In addition, it is unclear about how the case managers will function in situations of conflict between various agencies of government in regard to clients' needs and rights. To whom are case managers really accountable? Are they really human services ombudsmen? In short, the idea and concept is good but the proposal is short on substance....

Where do we go from here? First of all, every one of us here in this room has the responsibility to generate reasonable and informed public debate about the reorganization plan so that all citizens in the Commonwealth understand what is at stake - the consequences of these major decisions for all our lives. I underline reasonable and informed debate because we cannot afford discussions infused with wild charges and proposals and unsubstantiated assertions. The Coalition for Human Services, which I co-chair, will play a constructive role in stimulating informed public debate by distributing its analysis of the proposed plans and recommendations for changes in the legislation. I ask you to join us in this collective effort.

Second, we should not enter the arena of public debate by posing the Governor and Secretary of Human Services as villains because they are not villains. In fact, Secretary Goldmark is a very bright and able public administrator. He just happens to be dead wrong about major aspects of his proposed plan.

Third, as we formulate our comments and recommendations, we must get out from under the predicament of our professional self-interests. What is at stake is not our professional interests or jobs but services to people who are in desperate need of them....

Fourth, any reorganization plan must protect the right to human services. Above all else, we must remove the conditional aspects of the right to human services in this state. People's right to services can no longer be based on the Governor's or Legislature's posture in regard to raising sufficient revenue to meet minimal human needs.

Fifth, we must make sure that the Legislature discharges its responsibility to carefully scrutinize every aspect of the reorganization proposed. Public hearings should be made accessible to all the citizens. Hearings should be held in the western part of the state. Too often, those of us from Boston believe that the world ends at Framingham. Legislators must be made to respond to the concerns of their constituents on these issues....

In closing, I repeat, what is at stake are the lives of people - the human services we desperately need for our fellow citizens. We must keep the focus of debate and action at that target. This is our challenge. This is our responsibility and opportunity.

**Ian Menzies, Associate Editor
Boston Globe**

There is only one real question. What will the subject of this morning's discussion do to help the men, women and children who need help? Every other question is peripheral. This is particularly so, critically so, because we are discussing man's primary need - health, be it physical health or mental health or be it the supportive subsidiary needs to health - diet, housing, sanitation.

And we are currently discussing this issue in a country and in a context where health care is not yet considered a basic fundamental right, a national resource; where it is still a commodity to be bought and sold on the market place; where one must accept the health compromises that limited means sometimes impose; where knowledge of health care availability is often unclear, in part because it is nonexistent; where guidance for those who need a coordination of services is cloudy and fragile, and where the system too often simply breaks down.

Nor should we think we are simply addressing ourselves to the plight of the poor. In fact, the trauma of inadequate services may be far more real for the average family facing massive health problems because of their awareness of what might be possible and what is

denied them. All of which is simply to say that in discussing the reorganization of Human Services in this state, and specifically this morning, public health, we are perhaps discussing the most vitally personal, humanly important reorganization plan of all. And we do it with awareness that the federal government has as yet not moved into the breach, a breach recognized by all, even President Nixon, that the health care delivery system in this nation is in crisis.

Neat Little Boxes

So I'd like to consider all those neat little boxes in the Human Services reorganization plan, particularly as related to public health, as little boxes framing pleading faces, worried faces; faces of children, mothers, fathers - men and women asking for help. This shouldn't be an exercise in mathematics, time and motion studies, cost control or middle management effectiveness...

Boxes can be deceptive. I know. I've drawn quite a few for the Globe as a former managing editor and witnessed my disappointments that simply by doing so the paper did not necessarily improve as much as I would have liked or hoped. I have learned the trap of boxes though I masochistically continue to believe they are a necessary step in the evolution of improvement, but only if those who draw them have a clear concept of the goal to be achieved - I repeat, to



help people who need help - and a clear concept of how the boxes will, humanized, perform such a function.

I do thoroughly believe in regionalism, firm, fixed regionalism where all services are concentrated and hopefully can be interlinked. The public stands to benefit by administrative decentralization but only if there is an accompanying delegation of authority to permit decisions to be made at the level of primary contact. Secretary Goldmark's plan emphasizes regionalism and, I believe, delegated decision-making but, one has to ask him how he expects it to work, how he can oil machinery that is coated with rust?...

So I have to ask the Secretary more specifically, how exactly a family within a particular region will obtain help or guidance. How do the boxes come functionally alive? Will there be any physical centers or offices, or will present facilities such as welfare offices or mental health centers be used - a not too attractive idea for many without either of those particular ailments? Or is the reorg plan trying to say that a physical center isn't needed? But where is the original contact made even though case work could take over later? Is there in fact, under public health reorganization, any effort to coordinate and simplify procedures for the family who needs help and where will such services be performed? Will it be contracted out? To whom?

In summary, how will the ideas and boxes under reorg be implemented? How will people get the services or even the direction to the services they need? Will people within the regional and even local structure be able to make on-the-spot decisions, and how so if one looks realistically at the long pass-along history of state civil-service operations with the continual need to refer upward and upward until it reaches A & F?

There is little doubt that the greatest aid to state public health reorg would be a basic and massive reorganization

of the federal health delivery system, eliminating third-party insurers and using general funds as well as personal contributions for financing the delivery system, a financial control which would bring reforms - the only way to bring reforms in such an entrenched system. And undoubtedly, such monies would be dispensed for a total health care delivery system through federal-state regional health offices....

Perhaps the most productive role the public health sector of Human Services could play until the inevitable introduction of a people-oriented health delivery system, outlined in the Kennedy bill, would be to use the authority already granted to them by statute to demand statewide health delivery planning by the private sector.

I regret to say that I personally feel that the Massachusetts public health system has not distinguished itself in this regard. It has been bulldozed by the private sector and is still being bulldozed even in this so-called age of consumerism....

One has to ask the Secretary when will the public health section of Human Services in this state become strong enough, gutsy enough and well-enough staffed to halt the local expansion of private health services which do not conform to statewide health planning;

close any hospitals which do not meet standards, encourage HMO's in the right places by denying them the right to build where they are not needed.

The Department has the power. In the past, they haven't used it. Yet now, even with the power more clearly defined, the public health section still seems timorous.

And those little boxes do not indicate positions for strong men to emerge to take strong positions but rather indicate a committee-type approach which may drive the powers which exist deeper into the bureaucracy....

Finally, I would ask the Secretary where under public health reorg do we see the means to produce an updated master plan for health delivery - what hospitals should go; what hospitals should stay; what one hospital should provide and another give up; where we should develop coordinated health services; how health care is provided in the ghetto; how we should handle the changing patterns of where and how people seek health care.

I'd personally like to see some of that \$9 million spent in that area. To wait for federal assistance may take many yet dreary years of further confusion. Perhaps we could do a great deal for ourselves with what we have.

Luncheon Address Between Expectations and Reality

Maurice F. Donahue
Former Senate President, Massachusetts
General Court
Director, Institute for Governmental
Services, University of Massachusetts

I doubt very much if there is anyone in or out of government who is not convinced that some form of reorganization is badly needed. The question to be decided at this point in time is not whether we approve or disapprove of the concept of reorganization, but whether we feel the specific proposals now under consideration are precisely what is needed.

With that consideration in mind, I think there is some value to putting reorganization in its proper perspective. For example, although few people are aware of it, the current reorganization proposals are not the first to have been introduced following public endorsement of the concept of executive reorganization in 1966.

In 1968, Governor Volpe submitted a plan for the creation of a new Department of Public Safety, which would combine the existing Registry of Motor Vehicles, the Division of Motor Boats and the Department of Public Safety. Governor Volpe's plan was rejected by the House of Representatives by a one-sided vote of 158-52....

The Volpe proposal of 1968 was presented as a special measure which could not be amended and which had to be accepted or rejected by the Legislature within 60 days. This time, fortunately, Governor Sargent has not chosen that approach and has filed his reorganization proposals in the normal legislative manner.

But the pressure of time is still there. Not all the legislative bills relating to reorganization have as yet been filed by the Governor. The budget he submitted for the fiscal year beginning July 1 is based on his as yet not completely disclosed, precise plans for a reorganized governmental structure. Consequently, the Legislature will have only some 90 days to give full consideration to the various plans. Otherwise, the state will be forced to go to temporary monthly budgets until such a time as the actual form of the restructured government is approved and a suitable revision made of the budget....

Under these circumstances, it is more important than ever that we ask the right questions and that we get satisfactory answers. For example, much has been made of the financial savings which reorganization will create. But as the precise financial details gradually become available, the evidence grows that many of these savings are to be gained by switching various state expenditures to the federal government. How realistic such hopes are, at a time when all the

evidence indicates a drastic reduction in federal programs and federal fundings, is a question we have a right to have answered to our full and complete satisfaction.

Many goals motivate the people who put reorganization plans together. In this case, the claim is made that ten secretaries reporting to the Governor instead of 120 department heads makes good business. Instead of never meeting some of his department heads, the Governor can stay on top of the executive branch. This is a basic concept in governmental reorganization. Industrial and business leaders support this concept. So do I.

This reorganization plan also purports to put all similar activities under the same umbrella, and this is a laudable goal. For example, all programs on alcoholism or drugs will come under one head. This, hopefully, will strengthen the program by better control and will no longer weaken the effort by fragmentation. In addition, one of the goals of reorganization is to establish responsibility or accountability. I think the cabinet system makes all of these goals attainable....

More efficient and well-run government is important and it is attainable. But it is no guarantee that it will be cheaper. The history of reorganization here and elsewhere across the United States shows that in a few years the

budgets go much higher. What we really are interested in is a "bigger bang for the buck."

Likewise, promises of substantial savings should not blind us. Promises of this type seldom become a reality. Big savings only come about as the result of the elimination of programs or as Dean Price of the Kennedy Institute at Harvard says, "Big savings only come on big policy decisions." He said there will be no savings on reorganization per se, but that savings might result because reorganization is policy as well as administration. We cannot say that savings will result if we ask for more federal funding, because this is money from the same taxpayers.

Bonuses to Follow

But what we all should be striving for is good administration because these other benefits might then flow from the streamlined set-up. As the statewide Coalition for Human Services said in their press release, "Reorganization carries with it not only the obligation to use tax dollars wisely, but also the assurance that sufficient services of good quality are provided in order to serve the people." If we work toward this, then other bonuses might follow.

One of the selling points initially connected with reorganization was program budgeting. Whatever initials this budgeting process is known by or whatever



name it takes, this technique seems to have been put on the back burner. If this tool is as important as it was heralded to be, it should not be forgotten. If it is needed to improve the accountability of government, then its importance should be stressed to bureaucrats and to legislative budget experts alike.

Although the program management system has been sidetracked, I understand there is a new item in the budget to get this approach underway. In my experience, if this is the proper technique, and I think it is, it should be incorporated initially even if it takes some head banging. If it is not, it will still be on the shelf years from now.

Efficiency in government is important; but if it doesn't take into consideration human needs, then government does not fulfill its purpose. The people in control of government must be philosophically attuned to this approach or government can hurt people instead of helping them.

And anyone interested in the current debate over reorganization should realize that the current proposals involve much more than a simple streamlining of governmental structures and operations. Governor Sargent's proposals entail fundamental changes in our approaches to a multitude of problems. In this sense, reorganization is as much a redirection of basic policies as it is a regrouping of governmental agencies. It is also important that we should fully understand the full implications of those policy changes as well as the details of structural alterations and financial adjustments.

A key element in the plans so far made public is the proposed decentralization of services to a closer, more immediate level with the consumer. "Regionalization" is perhaps a better word than "decentralization" since each of the proposals involves in some form the creation of various regional entities within which the various programs will be coordinated and implemented.

"Decentralization" and "immediacy of service to the consumer" are very impressive words and phrases. And at

a time when so many people are concerned with the increasing remoteness of government from the people, there is great appeal in such ideas.

But there is always a danger in accepting nice-sounding phrases at face value. Particularly right now, it is important that we should understand fully the entire implication of what we are being asked to approve, and the simple truth is that decentralization or regionalization - under some circumstances - can have a negative effect of fragmenting policy decisions and creating excessive duplication of effort and expenditures. It has taken a long time to build up some of our existing statewide programs; for example, we certainly have to cite the area of Mental Health. We should insist on full information on how the proposed changes in policy and organization will affect what it has taken so long to create.

From my own personal experience in government and politics, there is a related aspect to this question of decentralization which gives me particular concern. Many existing programs would not now be in operation in Massachusetts - and again, Mental Health is a good example - it is were not for the efforts of effective statewide organizations which have helped both to educate the public and to press for specific government action. If decentralization does indeed bring with it a serious fragmentation of effort and of programs, I per-

sonally would fear that a very vital and creative element had been removed from our government....

The issues are too important for us to allow games of any kind to be played with reorganization. We should insist on adequate time and facilities for everyone concerned to get full and satisfactory answers to his questions and to have his say on the various proposals. The people of Massachusetts have already invested over \$5 million in advance preparation for this reorganization of our state government. And the people of Massachusetts will pay a great deal more in the future for any mistakes that we might make now.

The need for increased efficiency in government is obvious, as is the need for greater professionalism and for more immediate contact and exchange of views with the public. Certainly, if we conclude that the present plans do, in fact, provide those benefits, we should give them our serious consideration. And if we decide that, even more importantly, the present plans will upgrade the quality of the services provided to the people of this Commonwealth - particularly in key areas such as public health - then we should work actively and determinedly for their acceptance....

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of Public Health
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COMMONHEALTH



Massachusetts department of public health

volume 2 number 4 FALL 1973



COVER- DOMINGO SANTOS, PARAPLEGIC INMATE, MCI NORFOLK. (ALL PHOTOS IN THIS ISSUE WERE TAKEN AT THE NORFOLK PRISON HOSPITAL.)

Prison Health Project



Massachusetts Department of Public Health
Office of Health Education
600 Washington Street
Boston, Massachusetts 02111

Publication of this document approved by
Alfred C. Holland,
State Purchasing Agent. No. 15.

The Department complies with the
Civil Rights Act, Title VI, 1964.

Second-class postage paid at Boston, Mass.

COMMONHEALTH

volume 2 number 4 FALL 1973

Quarterly publication (Winter, Spring, Summer, Fall issues) of the
Massachusetts Department of
Public Health
600 Washington Street
Boston, Massachusetts 02111

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Foreword

Pearl K. Russo, Editor

Historic Faneuil Hall was the scene of an unusual and important meeting on May 12, 1973 - a first not only for the venerable meeting house but for the entire country. This was the all-day conference on prison health sponsored by the Massachusetts Prison Health Project and attended by physicians and other health professionals, lawyers and former prison inmates from the Northeast.

The Massachusetts Prison Health Project is the direct outgrowth of the report submitted by the Medical Advisory Committee on State Prisons. The Committee was constituted in October 1971 at the request of the Secretary of Human Services, Peter C. Goldmark, Jr., and the then Commissioner of Correction, John Fitzpatrick.

The Medical Advisory Committee was composed of 25 individuals from several health disciplines, and was chaired by Morton A. Madoff, M.D., Massachusetts Department of Public Health. The findings of the Committee indicated that the quality of health services provided in Massachusetts state prisons was almost systematically poor, without a coherent approach to health care or the health environment. The Committee recommended, among other suggestions, the establishment of an agency separate from the Department of Correction to be

responsible for the administration and delivery of health services in state correctional institutions; the reorganization of the assignments of health personnel; and the assignment of trained medical care personnel, including non-inmate paramedical personnel, to provide appropriate health care for inmates and correctional staff on a 24-hour basis in all prisons.

To implement these recommendations, staff from the Executive Office of Human Services, the Department of Public Health and the Department of Correction prepared an application for a grant from the Office of Economic Opportunity to establish a model prison health project. The project began officially on October 1, 1972, under the direction of Curtis Prout, M.D. Dr. Prout had served as Associate Director and Chief of Medicine at the Harvard University Health Services for almost 12 years. Additional staff were appointed in the following months.

Because of the importance of the question of how best to provide medical care in Massachusetts correctional institutions, COMMONHEALTH is publishing abstracts of the major addresses presented at the May 12, 1973 meeting. Limitation of space and technical problems involved in recording some presentations do not permit the inclusion of all the workshops. The abstracts were prepared by Helene G. Lyne of the Prison Health Project.

INTRODUCTION

Curtis Prout, M.D., Director, Prison Health Project, Boston, Massachusetts

Welcome to Faneuil Hall and to this conference. We organized this meeting with some trepidation and with very modest planning, but we have been delighted at the warm and interested response from so many quarters.

Prisons and prison health are now more than ever in the news, especially in Massachusetts. Our own project was funded by the Office of Economic Opportunity and began operation in September 1972 although we rather typically did not get any money until November. The OEO, we believe, has funded somewhat similar though smaller projects in Maryland and in North Carolina. The Institute of Medicine in Washington has evidently formed a committee to grapple with the problems of prison health care; and the AMA, as most of you know, has just completed a survey of health care in prisons and proposes a three-year plan to do something about this, involving the State and County Medical Societies.

Our project was the outcome of a study almost two years ago by a devoted group of volunteers, largely in the public health field, who proposed divorcing prison health care from Corrections and placing it under Public Health. That was the thrust of the OEO grant under which we are now operating. Facing our prob-

lems realistically, we have worked greatly toward the modification of this, as prison medical problems have features peculiar to no other system of medical care, as you well know.

There have been three or four conferences in the last two years on prison health, but these have been conducted at medical schools and teaching hospitals. The participants have been people who know a great deal about aspects of medicine and health care delivery, but not very much about prison medicine. The proceedings of the few conferences which I have seen have been long on generalizations and short on fact. I think one of our chief efforts today should be toward what actually happens and toward what realistically might be expected to happen. Prison medicine is different.

GUILT AND ANGER

To the press, the public and even the prison officials, the good prison is the "quiet prison." You can achieve a quiet prison by very tight discipline and total control over the inmates, and it can also be achieved by the liberal use of drugs, prescribed or illicit. The application of these methods, in fact, has given rise to many of our problems and these are facts which we must live with. The kings of ancient Persia, on hearing of defeat, would often have the messenger bringing the bad news put to death. I am afraid that the collective guilt of our society causes it to act similarly toward those

running the prisons and trying to deliver health care services. This guilt and anger are expressed by the poor social and financial status awarded to health care workers in prisons.

As you know, you can't run a good medical service in an atmosphere of hatred, contempt and chaos. Those of us who are in the field are well aware of the deficiencies without being told. It should be our purpose here today to uncover some of the reasons for the shortcomings and propose realistic remedies. There are a number of questions we don't understand, such as why only one-twentieth as many women are in prison as men; should we put 20 times more women in prison, or should we release nineteen-twentieths of the men now there? Another set of questions revolves about the relations of drugs to crime and whether we should deny to imprisoned offenders the alcohol and drugs so widely used outside. Our figures indicate that the use and abuse of drugs in prisons, bad as it may be, is probably no greater than that in the "straight" society.

Lastly, we hope to put together everyone's thoughts after this meeting to see if we can develop realistic standards and procedures. These could be used to extract from the public and the legislators the help which we need in order to run a decent medical care program.

William J. Bicknell, M.D.
Commissioner
Massachusetts Department of Public
Health

Quality medical care in a prison can be carried out only if the system is an integral part of the larger health services community. The extraordinary constraint and social and professional pressures associated with five and seven-day weeks in prison settings dangerously narrow professional exposure and practice experience. In a program which relates to the community, one has much larger resources on which to call; there is opportunity for providing a balanced medical experience; there is necessary stimulation and quality protection associated with peer contact; and there is access to technical and intellectual resources which cannot be available in one correctional program. Perhaps most important, it is essential that the best aspects of the medical community view as an integral part of their responsibility the care of prisoners. As Corrections moves more and more into the community, with more prisoners living and working in dispersed community settings, it will not only be essential to integrate into the health services community but also to render rehabilitation, training and job opportunities in health and health-related programs. If but a small percentage of jobs were made available to prisoners on work release and to individuals on parole, the rehab-

ilitative resource of the correctional system would be increased massively.

What are we doing in Massachusetts to accomplish all this? In June of 1972, an agreement was signed between the Secretary of Human Services, the Commissioner of Correction and myself stating: "Their mutual objectives are to improve the delivery of health services to inmates in correctional institutions and facilities of Correction and to parolees, to train inmates in the delivery of health services, and to develop health service employment for inmates and ex-offenders."

DETAILED AGREEMENT

In the intervening months, a formal office structure was developed. Two weeks ago, a further detailed agreement was signed and is now being implemented, making the Department of Public Health responsible for all program and professional aspects of medical care and health services in the prisons. Equal emphasis is given to rehabilitative job training responsibilities as well as our medical care responsibilities. Detailed draft guidelines for: 1) medical and dental care, 2) nutrition, 3) personal hygiene, and 4) environmental sanitation have been developed and are available today in draft form, and in final form will be implemented within the next several weeks. I feel very strongly that the Department of Public Health should assume responsibility for the genuinely difficult delivery service problems and that we must be accountable to prisoners,

to the administration and to the public to perform in a manner that is consonant with good medical practice. Therefore, the agreements that we have signed and the programs we have implemented are ones where we have direct responsibility, not advisory responsibility, where we must deliver, not merely discuss.

We do not suggest that we have all answers in Massachusetts, but we do submit that we have tried to identify the core problems and aggressively test solutions by implementing what, in our judgment, is not only a feasible solution but a quality solution.

THE ROLE OF THE PEDIATRICIAN IN A JUVENILE DETENTION CENTER

John M. Carper, M.D., Division of Youth Services, Massachusetts

Juvenile offenders are among today's disenfranchised, sequestered in dismal centers, largely ignored by pediatricians and teaching hospitals. For two years, I have worked at a Youth Detention Center in Boston doing comprehensive medical evaluations and conducting sick call. During that time, I did 210 medical evaluations. A brief summary of some of the results follows: boys were age 9 through 17; 68 percent were 15 and 16; 82 percent were white; and 45 percent came from intact families versus 55 percent from broken families. The inter-

views were conducted in a relaxed fashion. Questions were non-judgmental and open-ended. Sixty-eight percent admitted they were into drugs, and drugs were a serious problem for half of these. Fifteen percent had a significant physical defect.

It is interesting to note that 38 percent of the boys had one or more fractures. Twenty-one more youths were involved in serious trauma without sustaining fractures (e.g. car accidents, burns) so that one of every two boys had a major physical traumatic experience. There was an inverse relationship between major trauma and drug overdosage. Of the 40 boys who had major trauma, none had overdosed; and of the 12 who had overdosed, none had had a major trauma. It seems likely that children deal with aggressiveness in different ways, either through physical acts or through drug use. There is a need for further research into the interrelationship between trauma and drug abuse.

In daily sick call, I find that about half the boys have respiratory or acute infections; 25 percent have some type of trauma and 20 percent have some emotional, adjustment problem. This can take many forms: often symptoms begin in the evening when boys are locked in their cells, or the same boys appear several times a week with different complaints. The acute drug problems are usually heroin withdrawals, which are treated with Valium and Lomotil. We do not use methadone. Physiological

dependency is not too serious - three to eight bags a day is the average use - but psychologic dependency can be severe. The patients often become verbally abusive and are very persuasive. It is necessary to maintain a neutral, non-castigating attitude, trusting both the physical examination and one's own medical judgment.

PHYSICIAN'S AWARENESS

Finally, there are a few other things a physician should be aware of when working with delinquent adolescents in a detention center:

1. The issue of sleeping pills requires examination.

I maintain that insomnia is not a fatal disease. I further feel that not every unpleasant facet of the adolescent's life must be modified by a chemical. I state this attitude to the youth, allowing him to disagree but maintaining the firmness in my role as the physician and do not give out sleeping pills.

2. The issue of tranquilizers also requires study.

This must be individualized, taking into consideration not only what is good for the individual boy but what is good for the institution. Here again, one must at times not only resist the boy but also resist certain administrators who would love to administer an institution where there was never any conflict or fighting.

Certainly, tranquilizers are sometimes given.

3. Do not underestimate your so-called magical or priestly powers.

Many boys have a real concern about the intactness of their bodies and especially many boys who have taken hallucinogens and speed. A careful physical examination with the explicit statement that everything is normal is tremendously reassuring, and is needed by a much larger number of boys than I imagined two years ago.

4. Make it easy for the boys to see the nurse and the doctors.

It takes just a few minutes to assess many complaints, yet it is a very reassuring process to an adolescent in turmoil. Inadequate medical care is high on the list of those inmates in institutions throughout the country demanding prison reform.

5. Be neutral vis à vis the youth and administration.

If the youth seems to have some legitimate grievance against administration, one can often point this out to administrators who may have a bias against listening to delinquent youths. Conversely, one may have to defend or interpret certain administrative decisions for the youth.

6. An ever-present hazard for the physician is to become insensitive to the needs of the individual youth.

One must try to maintain a balance between being overwhelmed by his psychosocial history and being inured to the point of unconcern. The physician's effectiveness is lost proportionally as he deviates in either direction.

JAIL MEDICINE THE CASE OF CHARLES STREET

Jonathan B. Weisbuch, M.D.
Boston University School of Medicine

The statement has been made that the Charles Street Jail is hazardous to the health of its inmates. This statement was made as far back as 1919 when it was recommended that the jail be closed. The important problem at Charles Street is the physical environment, which promotes crowding and poor sanitation. The jail has inadequate facilities for personal hygiene, improper kitchen and eating facilities and minimal recreation areas. It is poorly heated and ventilated and, to a large degree, is an extreme fire hazard. It is over 125 years old. There are many penal institutions in this state and around the country suffering from the same problems. It is only when analyzing the situation, however, that you begin to realize the extreme hazards that exist.

Another problem hazardous to health is the daily operating procedure. The inmates are locked in their cells upwards of 18 hours a day, in cells measuring approximately 8' by 9' by 11', with two inmates in each cell. Prisoners, particularly those admitted at night and on weekends, are assigned to cells in a relatively haphazard fashion, with little concern for possible illness or mental disease and without regard for the problems of the inmate already in the cell. The guards and kitchen staff have received little if any health education in their training as prison officers. The partial reason for problems with daily operating procedure is that the primary objective of the administrative officers in the prison is the maintenance of tight security.

VERY FEW PROGRAMS

The system for health maintenance is in real disrepair. There are very few programs to prevent illness or disease. The supervision of kitchen workers is extremely minimal. The infirmary is used to house preventive detention prisoners, thereby taking space which should be used for the sick.

There are inadequate psychiatric services. There is an epidemic of suicide (one per year and an attempted one each month). A complete physical examination is not done on each incoming prisoner, despite the state regulations requiring each inmate to have one within 24 hours of admission. The difficulty of doing a

thorough exam, which takes from 20 to 30 minutes, on 7,500 admissions per year is easily understandable. This would take virtually one full-time individual working eight hours a day, and this kind of manpower resource is not available. The delivery of acute medical care is relatively good, and the physician and the two nurses do a creditable job. The sick line lasts about two hours a day and between 20 and 50 people are seen in that period.

CLOSE THE JAIL

A number of recommendations might be made to reduce health hazards. First, in order to lessen crowding, a serious problem, the bail system should be changed so that there will be fewer individuals unable to raise bail; or the judicial process should be speeded up. These, of course, are social and political problems. The physical conditions of the jail itself can be solved only by closing the entire institution. Since this is the solution which has been recommended about every ten years since 1919, it is obviously not going to happen tomorrow. While we wait for a new jail, some changes can be made. There should be monitoring of the plumbing system, the kitchen, the cells for possible fire hazards. Medically, adequate screening should be done on admission for TB, venereal disease, contagious diseases, psychological problems, drug addiction and alcoholism. This requires an increased budget. Possibly the Department of Public Health or, more

adequately, one of the medical schools in the area could take on this responsibility on a contractual basis. The important thing is to remove the responsibility for health care from the direct authority of the security and correctional officers. When this situation exists, objectives are at variance with the maintenance of the health of inmates, and the authority of the Health Department should therefore prevail. It is shameful and unconscionable that this state, which leads in so many other areas of health, should be this far behind in providing a minimum standard of care for its prisons.

Timothy F. P. Lyons, M.D., Physician,
Charles Street Jail

It is unanimously agreed, and has been for many years, that the physical qualities of the Charles Street Jail are horribly inefficient. Some of the deficiencies noted a year and a half ago have been corrected by Sheriff Eisenstadt; there are new windows which prevent pigeon droppings, a renovated kitchen, new plumbing, including baths and toilets, on the women's side and in one wing of the men's side. Eisenstadt has also instituted a bail appeal project for all prisoners, funding for a new psychiatric setup which is not in operation at this time, but which will have a psychiatrist, a psychologist and a psychiatric social worker. The guards may not have

medical training, but I would like to point out that they are very conscious of the adverse publicity associated with Charles Street and report either to the nurses or to me. There is separation of assaultive patients who are assigned to a cellblock by themselves where they can be under close observation by the guards.

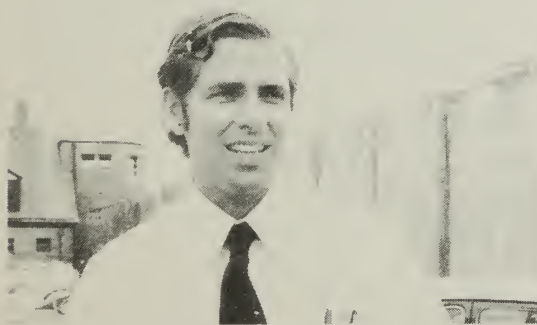
PROBLEM OF SECURITY

Charles Street is not a correctional institution; the people confined here have been charged with serious felonies including a large number of first degree murder charges, so that the question of security is quite a problem. The present daily census is about 235, less than in previous years because more go out now on personal recognizance or lower bail.

There are two clinics every day; there are three nurses so that there is coverage from 8 a.m. to 12:00 midnight; rounds are made two to four times a day. The major acute problem is alcohol and drug detoxification. The young patients, particularly those in the drug culture, have excellent health and good dental health. There is no methadone, morphine, demerol, Talwin or codeine (except for a combination of analgesic medication with codeine used in the dental clinic for surgery). The Boston City Hospital and the Massachusetts General Hospital are used for emergencies. A real problem is the demand for tranquilizers and sleeping medications. I find that by talking with the inmates, listening to

them and telling them that we now have them cleared of their original drug problem, we are now able to dispense a very minimal amount. When it is dispensed, it is usually for a three-day period. The inmates do, however, know every tranquilizer and every sleeping medication, do demand them; and I am subject to verbal and profane abuse when I don't give them routinely.

I think that a physician should have one standard of management of a patient, and it should make no difference whether the patient is in jail, or is paying or non-paying. I think the type of medical care at Charles Street is superior to that obtainable in many neighborhood areas, with 24-hour physician coverage and emergency rooms close by. The problem is financial, and the correctional institutions are at the bottom of the list when monies are being given out.



ELLIOT SALENGER, M.D. NOW
ACTING MEDICAL DIRECTOR MCI
NORFOLK.

DEER ISLAND MEDICAL SCREENING

Elliot Salenger, M.D.
Boston City Hospital

The Suffolk County House of Correction at Deer Island was built in 1910 on a beautiful island in Boston Harbor. The physical plant, however, is now extremely dilapidated and is upstaged by an ultramodern sewage disposal plant located next to the main prison building. For the past 20 years, there has been talk of rebuilding the prison; but because of the lack of interest and of available funds, this plan has never been developed. The Mayor of the City of Boston has announced plans to close the facility by 1974 unless the Commonwealth of Massachusetts takes responsibility for its operation; hence, the prison is a most depressing facility to both inmates and staff. At present, it houses approximately 185 inmates who are being detained for an average stay of one year.

A MEAGER PROGRAM

Prior to the implementation of a new medical program, the health care system was directed only at symptomatic and traumatic therapy. The entire medical programs consisted of the physician and two male nurses. The infirmary had approximately 20 beds, was totally devoid of all medical equipment, and was used only for administrative segregation. The medical examinations, treatment and records were extremely scanty. The examination consisted of the briefest

history and physical given by the physician; a Hinton test and chest X-ray were performed on new inmates bimonthly. If an inmate presented any hint of a medical problem, he was transferred, under custody of a correctional officer, to the Boston City Hospital. The budget for the entire medical program for approximately 200 men was less than \$50,000 per year.

MEDICAL SCREENING

In May 1972, the new Commissioner of Penal Institutions suggested that a committee of medical experts review the medical programs and facilities at Deer Island. The committee was immediately aware of the nonexistent medical programs and the unlimited dispensing of medications for anxiety and insomnia. In November 1972, a Law Enforcement Assistance Administration (LEAA) grant of \$31,000 was obtained in order to improve the health care delivery system, and the City of Boston supplied approximately \$2,500 for medical equipment. A medical director was appointed for the Boston Penal Institutions, and an initial survey of inmates was attempted by volunteer students from Phillips Brooks House at Harvard University. About 50 inmates responded.

In December 1972, a medical team composed of volunteers from numerous Boston teaching hospitals agreed to conduct an extensive two-day medical screening of all inmates at Deer Island, which consisted of the following steps:

1. A new medical record was instituted and each inmate had a medical history recorded by a nurse.

2. Vital signs - temperature, blood pressure, pulse, visual acuity - were recorded by a team of paramedics.

3. A complete medical examination, including genital and rectal exam, was performed by a physician.

4. The following tests were given: complete blood count, SMA-12 (multiphasic blood screening), Hinton, urinalysis, tuberculin.

All examinations were reviewed by the Medical Director and appropriate treatment was rendered or referrals made to outpatient clinics at Boston City Hospital.

In two days, 180 inmates underwent this examination. The average age was 27; 55 percent of the inmates were Negro; 40 percent, Caucasian; and 5 percent, Spanish-speaking.

PATIENT HISTORIES

The inmates presented the following drug addiction or abuse histories:

Alcohol	56%	Marijuana	18%
Heroin	42%	Cocaine	15%
Methadone	20%	Speed	8%
Barbiturates	20%	L.S.D.	5%

The following significant diseases appeared in the past medical history:

Gonorrhea	19%	Syphilis	8%
Allergies	17%	Epilepsy	8%
Hepatitis	16%	Attempted Suicide	5%
Prior Mental Hospitalization	10%	Tuberculosis	4%
(about 4% of these drug related)		Diabetes	1%

Forty-six percent of the inmates had no complaints about health.

In the medical examination, the following abnormalities were detected:

Approximately 5 percent of the men had abnormalities in blood pressure but, after extensive evaluation, were found to be within normal limits. Three men with heart murmurs were negative on further evaluation, and five men were treated for venereal disease.

LABORATORY TESTS

The laboratory testing revealed the following trends:

The majority of complete blood counts were within normal limits. This suggests that a CBC should not be performed, but that each prison infirmary should be equipped with a microhematocrit and that this test should be performed on each inmate upon admission. The multiphasic blood screening (SMA-12) revealed three patients with elevated bilirubins and one patient with an elevated

LDH (lactic dehydrogenase), both liver dysfunctions. The Tine tuberculin test revealed one positive; all agreed that a Mantoux tuberculin test should be employed in the future. The urinalyses were negative; one chest X-ray revealed pneumonitis and another, emphysema.

RECOMMENDATIONS

In summary, a review of the medical literature did not reveal that any survey examinations had been performed in any U.S. prison. The two-day crash medical screening program at Deer Island will, it is hoped, give an indication of the type of medical problems found in the inmate population and lead to suggestions for developing a medical program and obtaining better follow-up care. It is imperative that each inmate entering a prison have an extensive history taken and physical performed by a physician and nurse within 24 hours of admission. The medical history should be detailed with respect to past and present histories of drug abuse, communicable disease and mental disorders. In a medical examination, each inmate should have vital signs recorded. The medical examination performed by a physician should be extremely comprehensive and should focus on mental evaluation, signs and symptoms of drug abuse, venereal disease and pulmonary disease. A Mantoux test and urinalysis should be given, the latter to detect diabetes or liver dysfunction. It is advisable that each inmate have a microhematocrit. In preventive screening and detection of

pulmonary tuberculosis and other lesions, it is advisable that each inmate have chest X-rays within two weeks of admission.

Lastly, with respect to psychological and psychiatric evaluation, it is imperative that each prison facility retain the services of both a psychologist and a psychiatrist in order to appropriately classify the inmate according to his intelligence levels and behavioral disorders. A psychiatrist is needed to develop programs for the evaluation and treatment of mental disorders and drug abuses.

WORKSHOP I: MANAGEMENT AND INFORMATION

Frank Schneiger, Administrative Manager of Prison Health Services in New York City, opened the workshop with a description of the medical situation in New York's city prisons. In September 1971, the medical care for the city prisons was transferred from Corrections to the Health Service Administration. The latter has a budget of \$8,000,000 for ten institutions (with an eleventh for adolescents opening in June), with a total population of 10,000 short-term inmates, 70 percent of whom are detainees. In 1971, the staff consisted of an

acting medical director, a part-time physician and a secretary. Among the faults of the system were: medical procedures geared to other than medical problems, missing records of pathology, and the fact that, basically, no one wanted any change.

In September, unit managers were hired. These were young, inexperienced but willing. During the first phase, they installed basic procedures such as screening and admission examinations with detailed medical histories. The unit managers are now in their second phase, which they call their "accountability" phase. Although much of the first excitement is gone and most of the people who began the change have been burned out, they are now focusing on quality-of-care issues. They have put the burden on the physicians and nurses, where they feel it belongs. They have two excellent tools: 1) A reporting system that sets standards of performance; the chief physician must review all charts and report weekly, and 2) a Quality-of-Care Committee consisting of physicians and psychiatrists who meet once a week - one week is an on-site visit and the next week is a review of their recommendations. The Committee is now focusing on medical records, attitudes toward patients, certain diseases and drugs (at present looking at Valium), and is developing a supervisory structure for each institution and for the system as a whole. They are also contracting out dental care and are trying to contract

out medical care for six of the 11 institutions.

MEDICAL RECORD SYSTEMS

Medical Record Systems were discussed by Frank Breslin, Tufts Medical School '73, who is presently working as a medic at the MCI Norfolk Hospital. He reported that a year ago medical records were written on a plain piece of paper; there were missing records and there were no routine intake examinations. The hospital has developed new record forms, which are a compilation of VA and military service forms with variations and which have over 100 questions for patient history. A complete physical examination is done on every incoming prisoner together with a hematocrit, Hinton test, and an ECG on all those over 30. The medical service has also developed a follow-up form, but advice for medical follow-up is all that can be given since inmates do not usually care about their medical problems once they leave the prison. Coordination with outside health facilities is a priority goal for the future.

James Hovey, psychologist, told of his psychometric testing on inmates at the Deer Island City Prison in Boston. Except for some testing at MCI Bridgewater, he could find no evidence that any testing had been done elsewhere. He has given a variety of tests to 65 inmates to date, for which he guarantees confidentiality; he releases the informa-

tion to the inmate but not to the administration. The most striking finding he has made to date is a deficiency in the decision-making processes of some inmates.

WORKSHOP II: TRAINING AND WORK RELEASE

This workshop was essentially a discussion of the training, placement and educational potential in the health field for persons currently in prisons. Jobs in laboratories, in X-ray techniques, in environmental health areas, some in assisting physicians, medics or nurses, and some in nutrition were considered worthwhile for training prisoners on the inside. It was unanimously agreed that handling medical records or handling or distributing drugs were inappropriate for inmates. Particularly desirable are those jobs that are both meaningful in prison and serve to upgrade skills for employment after release. It is desirable to provide health career educational programs within the institution, with appropriate backup education in English, math and the sciences, and seminars for finding health career roles available outside together with resources to provide them. It was agreed, however, that education in prison is disrupted by emotional and institutional tensions and is usually not relevant to community-based corrections; therefore, as many educational programs as possible should be established on an education-release



1. J.J. MARTIN, INMATE ORDERLY.

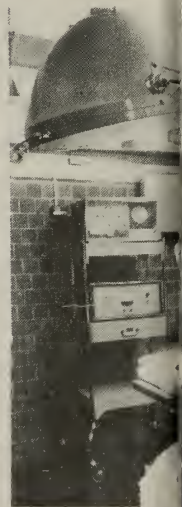


2. FRED ROLLINS, LONG-TERM PA
DUE FOR MEDICAL FURLOUGH.



4. AMADEO LEONE, PHARMACIST, IN THE
HOSPITAL PHARMACY.

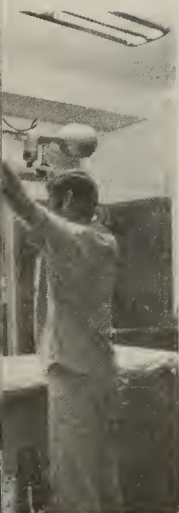
PRISON HEALTH PROJECT



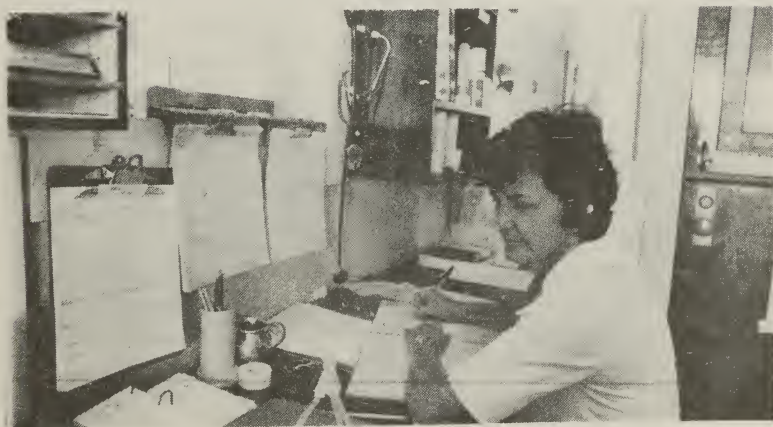
5. GEORGE HA
OPERATING



3. SANTOS AND LEON TRACT, ADMINISTRATIVE ASSISTANT, MCI NORFOLK.



4. NURSE, TRAINED AS NURSE.



6. NURSES' STATION.

basis, with students as part of regular classes in community-based educational institutions. Where length of sentence makes inmates ineligible for outside education, programs should be jointly constructed by educational and medical staff. More and more prisoners are expressing interest in the human service areas; since most institutional staffs think of business or industry as being the usual places of employment, people in medicine should let prisoners and staff know of any possibilities within the health field.

WORKSHOP III: LEGAL AND ETHICAL ISSUES

A discussion on medical experimentation opened the workshop. Bonnie Gorman, a nurse at MCINorfolk Hospital, said that tests to determine blood and urinary levels are now going on there. The inmates are paid from \$250 to \$300, the pay varying with the test and the time required. The drug company is also paying money into a fund for hospital equipment and needs. Dr. Della Penna, the hospital director, decides whether or not the testing should be done after it has been approved by the Human Research Review Committee at the Lemuel Shattuck Hospital.

"VOLUNTARY CONSENT"

Donna Calame of the Health Law Project in Philadelphia said there does

not appear to be much experimentation going on in the state institutions in Pennsylvania, but there is some in the county institutions. She sees the problem as one requiring a decision on whether or not to be totally against experimentation of any kind in prisons. It was argued whether or not it is possible for prisoners to participate "voluntarily." Robert Packard said he could not recall a single abuse when he was an inmate in California. He is not, however, sure that the term "voluntary consent" has any meaning under the circumstances. Packard personally volunteered out of boredom - for something to do - and he reported that the inmates were fully aware of what was going on, and had access to all the information they could want. He is of the opinion that it is impossible to generalize by saying that current methods of group experiments are good or bad; some are good, some are not.

Michael Haroz of the Cambridge Law Commune noted that the Nuremberg Trials and Jessica Mitford (author of "Experiments Behind Bars" in the Atlantic Monthly, January 1973), had both concluded that experimentation should not be allowed. Max Stern, a lawyer with the Massachusetts Law Reform Institute, said he did not think it is coercive to pay inmates.

Haroz also raised the question of medical rights and the access to health care in prisons. Historically, the courts

decided that inmates have no rights, and only recently has this begun to change. The Eighth Amendment was discussed - the right to be free of cruel and unusual punishment. Mr. Haroz advised advancing the legal representation for medical rights. One of the purposes of this conference is to build for the future; inmates should decide what procedural programs should be adopted and then let people on the outside proceed from there. He said there are now a number of court decisions (Newman vs. the State of Alabama, for instance) that guarantee inmates' right to adequate health care. Another recent decision awarded an inmate cash benefits for damages when he was beaten by prison guards. These decisions could be the basis for further guarantees of access to health care in prison.

Charles Crafts
Prisoners' Survival Center

I asked if I could speak today because of the way things happen. On this program, the doctors were first. I don't want this to sound like a criticism, but rather something which can broaden the perspective from an inmate's point of view. It is nice to be a doctor and to think of prison health problems as mainly medical. It is another thing to be in a prison and be faced with all the problems. This is what I call tunnel vision and it infects every prison movement in this

country. Statements can be made like "prisoners get medical care faster than people on the streets." Basically this is true. But it implies something that is not true. Prisons, because of their nature, have to have a hospital. They have quicker care, but not better care.

A POLITICAL REMEDY

Prison is a lousy place. Everybody knows that. Prison is itself responsible for psychiatric situations. The remedy for what is wrong in prison is a political remedy, a legal remedy, not a medical remedy. Look at prison itself as a disease, a contagious disease, a social disease. I'll tell you about this kid - a 21-year-old hippie. This was only a year and a half ago, and at that time you were not allowed recreation without a haircut, and he had a beard and long hair. He was withdrawing from heroin; he had asked for a piece of paper and a pencil and the guard wouldn't give them to him. When we came up from the yard, he was hanging in his doorway; he had tied a rope from the vent and had jumped off the edge of his bed and was holding his ankles. I thought he was still alive. The guards would not open the door to his cell until the inmates cleared the corridor. Eventually, one of the guards reached in and cut the rope with a razor blade and the kid hit his head on the hopper. If he wasn't dead from hanging, that would have killed him anyway, so it didn't make any difference. The guards would not go into the cell so I went in

and gave him mouth to mouth resuscitation, which was bad because his tongue was out. All the time I was looking in his eyes and they were open and I was yelling at the guards to get some help. Afterwards, they called the Billerica Fire Department, which came 20 minutes later. The next day I found out that there were two resuscitation units inside the prison that nobody knew how to use. Why didn't somebody know how to run those resuscitation units? Because nobody cared enough or thought enough; it's a whole attitude. I would like to see discussion on these issues include the prisoners' perspectives.

TO OPPRESS AND TO HURT

Prisons are a political thing, just as communities are a political thing. Prisons are racist; they are designed to oppress and hurt people, not to help people. Maybe 200 years ago they were a good idea, but not now, and people should look at the whole problem from this point of view. We need people to understand the politics of oppression, who we are and why we are. If you understand this, maybe you can take some of the good parts of prison away with you, such as our demonstrated willingness to fight the type of oppression that leads to conferences like this and cause whole sections of society to be totally neglected, and maybe we can take some of the good parts of your education, intellect and training with us.

That is what we want. It can be done medically, it can be done psychiatrically, psychologically, and every other way, but it has to be done freely. And freedom and prisons are not analagous. I think everbody understands that.

THE INMATE'S POINT OF VIEW

Robert L. Packard
Boston, Massachusetts

Let me begin by making clear the sources of my bias and point of view. I am an ex-convict, and during my incarceration I worked as an inmate clerk at institutions in California. I subsequently became a graduate research assistant on a study of prison drug abuse in Stanford. In addition, I taught four seminars on various aspects of total institutions and the criminal justice system. I hold a Master of Public Administration degree and am currently enrolled in the Harvard Master of Business Administration program.

There are no real experts on the subject of prisons and certainly no easy answers. At best, I can help your own thinking towards constructive action. Trying to communicate the inmate's point of view of anything runs the risk,

inherent in all generalizations, of being either too idiomatic or too encompassing. Hopefully, some of you will adamantly disagree with me, at least to the point of thinking hard enough about what I say to find the large holes in my logic. But let me begin by first showing the negative perspective from which prison health is practiced.

To the inmate, imprisonment is largely a waste of time. Moreover, it is dangerous, humiliating and demoralizing. On the one hand is the "Man," the various staff who are in control. Part of the inmate code is to protect yourself and others from the "Man"; never trust him, never get involved with him and take him for all you can get whenever there is an opportunity. There is no way to get help from him even if you want it. He is against you, you are against him.

On the other hand, perhaps even more threatening, are the other inmates, the low-riders, the old-timers, the guys who just drove up - all trying to survive and overcome a hostile environment. But the real cruncher is the futility of it all: the outdated vocational, educational and work programs and the fact that no one wants to hire a parolee.

OUT IN ONE PIECE

You can react by playing it cool, by doing your own time and trying to make it out in one piece. Or you can just not give a damn anymore about the system, the "Man," the whole god-damned world.

Surprisingly, with one important exception, prison health is almost a neutral subject to most inmates. To some, of course, it is an opportunity to game a little, to get a high from pills and to wheel and deal in contraband. To others, it is just another threatening part of the whole system - if you were really sick, they would just let you die. To most, it is out of the mainstream of prison life.

In spite of this, however, these are the characters in prison health from the inmate's point of view:

Regular M.D. - professional, detached, concerned only with medical aspects, fairly hard to game.

Medic - a fool, doesn't have to work hard; likes to think he knows what's going on; uses prison jargon; a push-over, not very threatening but still part of the staff.

Inmate Clerk or Technician - smart convict, doing his own time, steady source of alcohol and pills for himself and close partners.

Psychiatrist - the important exception I spoke of earlier, very threatening; can keep you locked up forever; important to game him, make him think you are ready for the streets; weird, asks crazy questions.

Inmate - bored, demoralized, wants something to do, anything for a change,

somebody to talk to, something to talk about, anything to pass the time, to escape the meaningless reality of prison.

EASY PREY

Perhaps the best way to describe prison health is with a personal anecdote. When I met John Johnson, he was in the Adjustment Center, the prison within a prison. Not surprisingly, he was also black, illiterate, thoroughly mixed up and with almost a lack of self-concept. He was, accordingly, easy prey for the pressure artists and the staff. The latter pushed and pulled him into whatever recommendation or program was convenient at the time. After one 15-minute interview, a staff psychiatrist had evaluated him as "untreatable." As time went by, I began to notice that he was almost always on sick call. His medical record revealed an endless list of medications for minor ailments. I asked John what was wrong with him, but he couldn't come up with anything other than that he never felt well. One day, John brought a letter from his mother for me to read to him. I asked if I could help him write a reply. He perked up, and we wrote his first letter. Somewhere I wangled a second-grade reader, and for a month I stood outside his cell running my finger under the words as he repeated and memorized. And then he discovered he could identify words by himself in passages we had not yet covered. He could read! All night long he kept asking the officer on

duty, "Say, man, is this right?" Needless to say, John Johnson became a sick line dropout.

In this case, the disease typically needed to be treated with love, interest and concern. It is not easy to love, for instance, a child molester or a psychotic murderer, but it is your responsibility; and frequently you are the only more or less neutral figure in the environment.

PRACTICE MEDICINE

Those of you who are prescribing medications in prison, particularly those who are prescribing tranquilizers, are for the most part merely treating symptoms. Worse than that, you are making it very unlikely that the course of the underlying disease will be substantially altered. Stop prescribing medication and start practicing medicine! And a word for those of you who conduct 15-minute psychiatric evaluations upon which a parole board may base its decision; you are not doctors and you are not psychiatrists - you are charlatans.

We don't need a "competent physical examination" or "more psychiatric services." We do need physicians and health personnel practicing a much higher form of medicine.

Contraband Drugs in Prison

William McCue

Drug Coordinator, Massachusetts

Department of Correction

We all probably feel that the prison system is not the best place in the world to bring about changes, but it does exist; it could be worse, it could be better, but I am not going into the politics of the prison system today. I would, however, like to talk about the use of both licit and illicit drugs in prisons.

At Walpole Prison now, there is a major drug problem with both contraband and medically prescribed drugs. The latter is a major problem that I am trying to correct; the problem of irresponsible doctors who, as the path of least resistance, give inmates any kind of drug they want. For instance, at MCI Concord, out of 416 inmates one day a few weeks ago, 40 were given prescriptions. On the same day at Walpole, out of approximately 600 people, over 150 were getting phenobarbital for sleep and 63 were getting Talwin, a very severe abuse-potential drug. There were also several inmates on Equanil, Ritalin and other abuse-potential drugs. I feel that this is dangerous, irresponsible and criminal because it is perpetuating drug abuse. Every day, people are being arrested for drug-related crimes. They come to prison supposedly to be corrected and rehabilitated so that they can go back into society free from drug abuse. It is a

very traumatic and severe emotional and physical problem when a person cannot overcome his craving or compulsion to use drugs. When the very system which is supposed to be helping him to overcome this dependency promotes and continues to perpetuate that pathology, then I say it's criminal. The Department of Correction has been remiss in not trying to bring about some kind of change before now.

NAIVE GROUP

In my experience working in the areas of drug abuse and drug education, I have found that the medical profession is probably the most naive and most contributory group of individuals as far as drug abuse goes. I challenge doctors to get out of their encapsulation, their professionalism, and to stop thinking of drugs not only as vehicles or tools to treat medical problems, but as dangers. A doctor should do a little more thinking, a little more evaluating, before he prescribes a drug to an individual that may lead to his death or to a life dependency. Darvon, for example, is a drug that could and should replace Talwin. I feel the potential for abuse from Darvon is much less than it is from Talwin. Parafon is another drug which I would consider even better than Darvon.

At Walpole now, we are working first of all on security, trying to tighten up the dispensary where inmates have been "gorillaing" the medical personnel,

where doctors and medics have had their lives threatened. As a result of this, it is often the path of least resistance to just give a man what he wants.

I think we must take a look at some of these things we are doing; it is possible to cut down on the abuse of licit drugs and that kind of prescribing. When the problem of licit drugs is under control, it will be easier to deal with the problem of illicit drugs.

As far as the Drug Treatment Program goes (and I am the Drug Treatment Coordinator for the Department of Correction), there is no valid drug treatment, no ongoing drug treatment in the prison system. So we really have a three-fold problem: doctors dispensing drugs, inmates using them and, at this moment, no viable useful drug program. That is the situation we are in now.

MEDICAL CARE AT MCI WALPOLE

Stanley Sagov, M.D.

Part-time Physician at MCI Walpole
Physician to the Harvard University
Health Services

I really would like to tell you why it is that I find myself not able to give medical care at Walpole in the way I am able to give it in other places. There are some important differences about

giving medical care at places like Walpole for which medical training does not seem to make one qualified. Medical training generally teaches one to operate in relation to patients in an atmosphere of trust and confidentiality. You assume that the patient is genuinely telling you what the problem is. You do not have to evaluate whether or not the complaint is for any other reason than that they wish to get help. The situation at Walpole is very different from the model I have described in other populations in that the overwhelming majority of the people coming to see us do not have complaints which they would come to see a doctor about if they were on the street. Some of this has to do with the way prison affects people, and I think any attempt to try to understand this must take into account the political aspect of prisons. This has been stressed by some of the speakers before and I won't belabor the point. I think, however, anyone who wants to try to do something about medical care in prisons has to be politically aware and work in collaboration with all other efforts. Attempts to improve medical services as a separate entity are bound to fail.

INMATE GAMING

The other major reason why the complaints you get cannot be dealt with in the same kind of mutual trust is because of the drug-related gaming that goes on by inmates. Some of the reason this is particularly true at Walpole is

that one previous doctor who had worked there had been an alcoholic and had had very free prescribing patterns. Demerol was very widely prescribed for little or no apparent medical reason. Thus, we had to deal with many people who were used to getting psychoactive medications. In addition, on reviewing the medical records of the last ten or fifteen years, we found there were hardly any records of examinations done on those patients who had records at all. There were simply dates and names of drugs administered; there were no lists of complaints, no examinations and no diagnoses. This is a situation for which I am ill equipped and not trained to respond. There is no way I can evaluate the justifications for the use of those medications. If I begin to try to apply the principles which I would normally use, for instance, I would have occasion to prescribe Talwin for only one patient out of all the thousands of patients I have seen outside prison in the past two years. At Walpole, according to one of our medics, at least 1,000 Talwin tablets a week are being given out.

PRESSURES AND ABUSE

This gives an idea of what a doctor faces when he walks into that institution, despite the most noble of motives and ideals for improvement of medical care. The pressures to apply different practices and the verbal and threatened physical abuse become very wearing after two or three hours of clinic time. My feeling is that it is unrealistic,

despite what has been said by a number of speakers before me today, to expect a physician in three or four hours of clinic time to deal with very fundamental and long-lived drug problems. This is especially so if whatever he does to attempt to cut down or off medications is not supported by comprehensive drug treatment programs. It is not possible in 20 minutes to inject the kindness, love, humanity, compassion, understanding and simple time that are required to persuade people it is not in their best interest to use drugs to alleviate their problems. This is one of the fundamental reasons why there is such a high prescription rate for drugs at Walpole.

There were other problems: there was no laboratory technician and we were unable to get basic tests done, such as blood counts, chest X-rays or urinalyses. There were long delays between sending out specimens and getting back results. The record-keeping system was manned by inmates who were under a great deal of pressure from other inmates; and pages were torn out, records were lost or stolen, making continuity of care impossible. Addicts crowd the medical facility trying to get medication and make it difficult for other inmates to be seen and evaluated properly. The doctor is put in a "policing" role, trying to outsmart con artists instead of treating medical problems.

UNHAPPY EXPERIENCE

There are so many things that happened to me while I worked at Walpole that it is hard for me to summarize it all. I will read something I wrote which comes out of my unhappy experience at MCI Walpole:

"We cannot provide humane medical care and compassion in a spiritual and intellectual vacuum. Improved medical care is only possible if a major philosophical and physical shift toward a generally enlightened penal system occurs. Doctors and nurses cannot accomplish this alone; we need a general rehabilitative environment in which our efforts are part of a large thrust to humanize and socialize people."

When I came to Walpole, it seemed to me that the prevailing attitude was one of no hope. A year later, after having worked there and being with a team of people to try to work for change, I am afraid that I still feel that there is no hope. I got very fired up by Walpole when I first went there and was amazed and disgusted and ashamed of what was being perpetrated in my name as a citizen of this country. I made numerous contacts in Connecticut and Massachusetts, made speeches in departments of Harvard and MIT. Many of these people were similarly dismayed by what I told them and came with me to Walpole to see what was going on, and they got fired up about it as well. I made many contacts, at least 40 phone calls, and

arranged several meetings. A number of people were ready to volunteer, and I mean highly skilled and trained people with wide experience and international reputations. Not one of them has been taken up by the Department of Correction. We have been left alone and we have been unable to accomplish anything else. We need support from counseling, line staff, administration, the Department of Correction, the Legislature, inmates union and their inmate constituents, and the public in order to do what we all claim to want to do.

WORKSHOP IV: WOMEN IN PRISON

This workshop was in two parts: women in prison and drugs in women's prisons. It opened with a philosophical discussion of women's problems, both in and out of prison, as opposed to those of men. Mary Norris of the American Friends Service Committee felt, as did some others in the group, that women are forced into a dependency role in life, which is further fostered in prison. Women are more easily institutionalized than men; institutionalization is thus possibly more damaging to them, causing apathy and dependency, which are most difficult to overcome. Possible remedies to help women to achieve independence are: more use of available resources and attendance at courses such as that now being given at MCI Framingham on Human Sexuality.

RE-ENTRY PROGRAMS

Marjorie Eltzroth, Drug Coordinator of the Executive Office of Human Services, gave a brief history of Framingham, which has until now been the prison for women in Massachusetts. It was originally the "Home for Wayward Girls" and inmates are still being treated as girls. More women, however, are now going out on work release, and the institution is progressing from the rural home with a nursery for inmates' children of 96 years ago to a coeducational institution focussing on community based re-entry programs and work release. In recent years, the number of women in residence has steadily declined. As the count went down, prisoners were accepted from the neighboring New England States, but this practice stopped in late 1972 when the cost per prisoner per year soared to \$12,000.

Most convictions are for crimes against public order, with approximately one-fourth of the women incarcerated for larceny, manslaughter and armed robbery. The plans for Framingham are to maintain it as a prison for the few women who require incarceration and to turn the rest of the institution over to men who are within 18 months of parole and who are eligible for work release or pre-release services. During the discussion, the point was made that as women's role in society changes, more women might be committed. This was illustrated by the fact that the number of women classified as "assault-

ive" had risen from six in 1966 to 18 in 1972. The female population does not seem to be dropping as rapidly as the administration had believed it would.

Drugs in Women's Prisons

The decline in the female population reflects the drop in the number of women sentenced for drunkenness from over 100 in the early '60s to 15 in 1972. As of July 1, 1973, drunkenness will no longer be a crime in Massachusetts. While commitments for drunkenness have gone down, commitments for narcotic offenses have risen from one to 24 between 1966 and 1972. The peak of the narcotic commitments appears to have been reached and may be declining.

The 24 women sentenced to Framingham for drug crimes were all charged with crimes related to the possession or sale of heroin or cocaine. Most of these were new commitments and the severity of the sentence was, in most cases, not related to the charge. The number of female drug abusers rose steadily until 1971 when there were approximately the same number of alcoholics as drug abusers. In 1972, the number of women in both categories declined but they still made up over 70 percent of the population.

Client characteristics, other than abuse of alcohol and drugs, have remained fairly constant during the period from 1966 to 1972 except for race; the proportion of Blacks has grown from

less than 20 percent to about 40 percent. There has not been a parallel increase in the black population in Massachusetts during this period.

Since Framingham is now coed and there is a major emphasis on programs outside the walls, the use of contraband drugs by women could increase.

WORKSHOPS V AND VI (COMBINED)

Workshops V and VI were combined and discussed backup systems and community resources, problems of recruiting, the pros and cons of using inmate paramedics, inmate medical committees and a description of the New York City Outpatient Division System.

Dr. Curtis Prout opened the workshop with a description of all the possible levels of care which may exist in a prison system:

1. The Prison Hospital varies in capability according to the institution. It has the advantages of ease of access to inmates and custodial personnel and security personnel and is, therefore, cheaper than using outside hospitals. The difficulty of adequate staffing, however, is a disadvantage.

2. The Local Community Hospital can be most useful to the prison medical staff provided its relationships are

friendly. Handicaps in Massachusetts have been: lack of space and experience in handling security risks, delayed payment by the Commonwealth, unwillingness of staff and other patients to associate with felons, and frequently a disrespectful clientele.

3. The Urban Teaching Hospital has the advantages of great experience with acute medicine and availability of specialists and sophisticated equipment. Its expensive costs and distance from the correctional institutions are disadvantages.

4. The Medical Schools, with very few exceptions, express great interest in prison medicine but do not wish to become directly involved. Explorations, however, are in progress with Tufts University to set up an HMO type of relationship with one or more of the state prisons.

5. The Medical Societies have recently shown some interest. The AMA has published a 40-page survey and is proposing a three-year plan to upgrade care. Efforts of the Prison Health Project to get actual help from the medical societies, however, have had disappointingly little results.

6. Local Practitioners constitute the most commonly used system in the country. Their services are good for community relations. The physicians are usually capable and conscientious,

but they cannot give much time.

David Kummer, M.D., Chief, Health Programs at FCI, Danbury, Connecticut, discussed the use of inmate help in patient care, record handling, distribution of drugs and laboratory testing. The federal prison in Danbury relies on inmate paramedics to provide a good deal of the medical care. Because the medical staff have difficulty in getting physicians, the use of inmate help is necessary in order to meet community standards of proper care at Danbury as well as at other federal prisons. There are four critical areas of health care delivery involving inmate help:

- * Preparation of and dispensing medications - Because of the potential dangers of abuse, no drugs other than aspirin and throat lozenges are prepared or dispensed by inmates. Throughout the federal system, this aspect of health care is considered the most sensitive

- * Nursing Care - Problems encountered with inmate help are: lack of training, homosexuality, fabrication of data and frequent turnover. The solutions employed include: 1) Narrow definitions of duties, charting vital signs and relaying all patient complaints immediately. Independent judgement and action are discouraged. 2) 24-hour supervision by physician assistant, nurse or physician. Coverage is by telephone if necessary. 3) Careful selection of patients hospitalized in prison facility.

All critical or even questionable cases are hospitalized in other facilities.

- * Record preparation and handling - Difficulties encountered are: theft, alteration of records and invasion of privacy. The following solutions are employed: 1) Since the mid-sixties, all federal institutions are using one or more medical record technicians. 2) The medical service uses two records - an outpatient record that can be pulled immediately by inmate help during sick call, and a permanent record with test results, psychiatric and other sensitive information that is locked and available only to the technician. 3) Further security is provided for highly sensitive files.

- * Laboratory - Here the problems encountered are: lack of training, frequent turnover, critical lab results that cannot be easily verified, inmate pressure for revealing and fabricating results. Methods to overcome these problems are: 1) Limiting tests done by inmates to a small number; 2) Intrinsic and extrinsic controls (CDC, American College of Clinical Pathologists) with each test; 3) Random spot checks with the local laboratory; 4) Use of inmate training at the Medical Center for Federal Prisoners at Springfield, Missouri - 18-month courses in four health care areas; 5) Review of procedures and training by a locally contracted registered laboratory technician.

Inmate Medical Committees

Bernadette McClain, a member of the Resident Health Services Advisory Committee from MCI Framingham, told of the Committee, which began under the auspices of the Prison Health Project and which had its first meeting in December 1972. The Committee consists of two inmates from each institution as voting members, and of nonvoting outside members, such as physicians, dentists and members of the Prison Health Project. Meetings are held at least once a month. These provide excellent forums for discussion of inmates' views of the medical care at their own institutions; they give inmates a place to air their ideas and serve as a valuable link between the prisons in the interest of getting better medical care.

SUMMARY AND CONCLUSIONS

Curtis Prout, M.D.
August 17, 1973

Going over these remarks and abstracts since the original meeting, I am struck by the fact that they do have cohesiveness, that they meet a real need and that they need wider dissemination.

Dr. Carper's intriguing observations on trauma and the inverse relation between overdose and trauma, for example, need further follow-up. One is also tremendously impressed by his humane approach.

Dr. Weisbuch's devastating critique of the Charles Street Jail could be replicated elsewhere throughout the state and the country and deserves study; finding what is wrong, however, is not so difficult by far as finding ways and means to correct these deficiencies. One is reluctantly forced to the conclusion that, despite repeated exposes and public expressions of horror, the failure to implement by personnel or money any of the most urgent demands can only indicate, to this observer at least, a deep, subconscious desire not to help the inmates of our prisons.

A BITTER PILL

Dr. Lyons' statement of his workload and procedures gives a good idea of one approach to the problem. Charles Crafts' impassioned statement of the inmates' viewpoint helps us understand further the intricacies of the doctor-patient relationship. The blunt words of Robert Packard are a bitter pill that all of us involved in prison health must swallow.

The workshops could only be summarized, but they obviously condense the hard work and thinking of many experienced and devoted people. Mr. McCue's condemnation of the physician prescribing in prisons is explained in part by the thoughtful and moving observations of Dr. Sagov. Dr. Salenger's paper, giving specific findings from a physical, laboratory and psychological program, points the way toward requirements which we might establish for some uniform procedures.

The conversations that went on before the meeting, between the delivery of the papers and afterwards with many health workers showed that we all have similar problems. We all need support, which must be spiritual and professional as well as financial. There is no doubt that this meeting was highly worthwhile. It should be repeated regularly, not only here, but in other sections of the country. We hope some of our observations and conclusions will be of widespread interest and use.

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COMMONHEALTH



Massachusetts department of public health

Volume 3 number 1 winter 1974

1/12:119 22A1

COMMONHEALTH

Volume 3 Number 1 Winter 1974

Quarterly publication (Winter, Spring, Summer, Fall issues) of the
Massachusetts Department of
Public Health
600 Washington Street
Boston, Massachusetts 02111

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Second-class postage paid at Boston, Mass.

EMERGENCY medical services

Pearl K. Russo

a cry for help

Sirens scream, lights flash as the ambulance, fire engine or police station wagon careens down the city street or major highway. The onlooker may assume that the victim of an automobile accident or of a sudden illness will soon be out of danger, that he will quickly receive effective treatment to sustain life while he is being transported to a nearby hospital. Unfortunately, this is rarely the situation throughout the nation - and Massachusetts is no exception.

A few figures from recent studies¹ reveal the extent of the problem. Highway accidents are responsible each year for 55,000 deaths and two million injuries, one-tenth of which result in permanent disability. The tragedy of this needless slaughter is highlighted by the fact that 15 to 20 percent of accidental highway deaths could be avoided if victims received prompt and effective care at the scene, enroute to the hospital, and in the hospital's emergency service.

A FRIGHTENING TOLL

Nonhighway accidents take an equally frightening toll - more than 64,000 deaths annually in addition to 9.3 million non-fatal injuries, of which a quarter of a million leave permanent disabilities. Children are a particularly vulnerable group; they account for 15 million accidental injuries each year that result in about 16,000 deaths. The National Safety Council estimates that accidents kill more people in the productive age groups up to 39 years than any other single factor and are the fourth largest cause of death after that age.

Sudden medical emergencies, such as cerebrovascular strokes, coronary occlusions, diabetic crises and other sudden critical situations, present the same grim picture. The American Heart Association has estimated that approximately 10 to 20 percent of the 275,000 coronary deaths that take place before the victims reach the hospital could be

prevented if proper care were administered at the scene and on the way to a medical facility.

FEDERAL APPROACH

Emergency medical care services and resources nationwide have been less than adequate and have suffered from a lack of planning, training, equipment and coordination. In response to national pressure from concerned individuals and groups, the President, in his State of the Union Message of January 1972, directed the Secretary of Health, Education and Welfare to develop new ways of organizing and providing comprehensive emergency medical care. As a result, HEW initiated a coordinated federal approach to meet the problem by providing technical consultation and guidance to states and local communities to assist them in developing quality emergency medical services (EMS), and made grants available.

One of the recipients of such a grant within the Department of Public Health is the Office of Emergency Medical Services, which became operative in January 1973. Its purpose is to develop and implement an emergency medical services system for the Commonwealth. Prior to the creation of the Office, the task of planning emergency medical services in Massachusetts had been carried out by the Tri-State Regional Medical Program (RMP), in cooperation with the Area Comprehensive Health

Planning (b) Agencies. In the spring of 1973, the program responsibilities of RMP were phased out as a result of a federal decision. RMP then suggested that the newly staffed Office of Emergency Medical Services take over the second year of the HEW grant. Following the submission of a grant proposal to HEW on August 1, 1973, the Office was notified by HEW the following month that it had received a grant of \$777,611 to continue planning emergency services in Massachusetts. Despite the switch from the Tri-State Regional Medical Program, there has been no break in system planning.

EMS SYSTEM

Under the terms of the grant, part of which is subcontracted to the Comprehensive Health Planning (b) Agencies, the Office of Emergency Medical Services is working to establish a regional and subregional, as well as a statewide, emergency medical services system. The system will include every individual involved in the delivery of emergency medical care, from the physician to the ambulance driver. All are actively engaged in planning the system, which is being designed in close cooperation with representatives from all regions and all EMS components. Each segment - hospital staff, physician, ambulance crews, fire and police department personnel - provides his perspective on the essentials of a good EMS system.

The planning agencies have begun to develop the system around the categorization level of each hospital in their region. Pending rules and regulations require hospitals licensed by the Department of Public Health to provide emergency treatment of life-threatening conditions and to classify their emergency services under one of three categories:

1. Standby Emergency Services:

These are hospitals without an emergency department, but which are capable of giving emergency services to keep a patient alive until he can be transferred to another facility.

2. Routine Emergency Department:

These are hospitals staffed and equipped to render prompt diagnostic and therapeutic services to most emergency victims.

3. Comprehensive Emergency Department:

These are hospitals fully equipped, prepared and staffed to render the most comprehensive and advanced services in an area.

The importance of establishing these categories can be more fully appreciated in the light of the following facts:² Three-quarters of the nation's 5,310 community hospitals with emergency facilities have fewer than 200 beds. Only 10 percent of these institutions are equipped to handle all medical and surgical emer-

gencies. Less than half have blood banks; and a shockingly large number, 58 percent, are not equipped to handle cardiac emergencies. Many of the smaller hospitals are lacking even the emergency equipment that the National Academy of Sciences-National Research Council recommends for ambulances.

In the summer and fall of 1973, the Office of Emergency Medical Services made an initial survey of all providers of emergency vehicle care. The survey had a dual purpose: 1) to ascertain which fire and police departments, and other groups are providing emergency medical care; and 2) to collect data to aid planning groups throughout the state.

Convinced that categorization and regionalization of emergency medical services can best solve the problems in the Commonwealth, the Department of Public Health and the "b" agencies have called together the hospitals in their respective regions to discuss where each hospital will fit into an overall EMS plan. The individual hospital will make the final decision regarding the category under which it will provide emergency treatment.

COORDINATED SYSTEM

In each of the eight regions of the Comprehensive Health Planning (b) Agencies, the regional offices are now discussing the designing of an emergency

medical care system with other pertinent services, such as police, fire, ambulance companies, and other providers of emergency medical care. The aim is the establishment of a coordinated system that will make fuller use of regionalization and categorization of all medical facilities. Such an approach will solve many of the deficiencies in the delivery of emergency medical care if ambulance, fire and police companies know what other services to use and for what purposes. Reports of activities are very encouraging and indicate that the regional approach to solving some aspects of emergency medical care is gaining greater acceptance in the state.

TRAINING PROGRAM

The remainder of the contract monies provides for support of a statewide emergency medical technician training program, the development of an EMS public education system, and the collection of preliminary EMS data. Under the HEW grant, the Office of Emergency Medical Services is preparing to give a minimum of 30 courses throughout the state to about 1,000 individuals. These figures are based on the premise that the Office will bear the total cost of the courses - instructors, books, equipment. If the hospitals and agencies pick up part of the costs, the number of students trained can be greatly increased. The persons to receive the initial training will come from the ranks



Coordinated EMS system.

of working ambulance attendants, from firefighters and policemen. Any agency or hospital that offers the 81-hour course for emergency medical technicians must be approved by the Office of Emergency Medical Services, and the design and curriculum of the course checked to guarantee that graduates will be qualified to take the certification exams of the National Registry of Emergency Medical Technicians.

REPORTING SYSTEM

Another important aspect of the work of the Office of Emergency Medical Services is to establish a trial test of the Ambulance Run Reporting System. A pilot system was established in Toronto, Canada, in 1969 and has served as a model in a few cities in the United States. Working under the reporting system, an ambulance attendant will fill out a report sheet to indicate where the accident occurred, the nature of the accident or illness, the treatment given en route, and the facility to which the patient was taken. Under this system, the medical record could begin at the time of treatment, rather than upon the patient's arrival at the hospital. The reporting system will also provide other valuable information that will enhance the efficiency of the entire emergency medical services system. For example, the reporting may indicate an unusually large number of industrial accidents in one area, or reveal snags in the flow

of traffic elsewhere. Staff from the Office of Emergency Medical Services have visited Toronto for a first-hand look at the operation of the reporting system there. The final design of the Ambulance Run Reporting System in Massachusetts, however, will not be a carbon copy of the Toronto plan. Rather, it will reflect the particular problems of this state. The testing of the system will begin this spring.

Essential to the work of the Office of Emergency Medical Services as it relates to ambulance services will be the establishment of a registration file of all certified ambulance attendants, the Attendants Registration File. Maintenance of this file will permit the staff to keep in touch with all registered ambulance attendants, to notify them of new courses to update their training, and to alert them when they come up for recertification.

AMBULANCE SERVICE

One of the weakest links in emergency medical care has been ambulance service. Not only are many communities without any ambulance coverage, but many vehicles used for emergency treatment and transport are poorly designed and inadequately equipped to treat and extricate trapped victims of accidents, or to treat victims of sudden illness. More importantly, on-site care is sometimes given by untrained or inadequately trained³ attendants. A few national sta-



Ambulance that meets all recommended standards of Federal Department of Transportation.

tistics indicate the enormity of this problem.

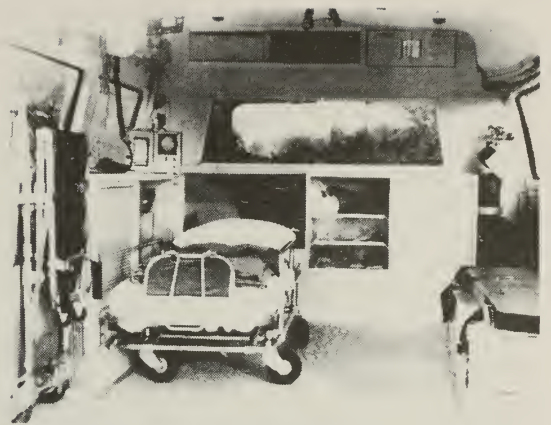
There are an estimated 44,000 ambulances in the nation, but only about 1,300 are operated by hospitals; 4,500 are operated by fire or police departments, 4,700 by commercial firms, 11,000 by volunteer groups, and 19,000 by morticians. Nearly one-half of the vehicles were not designed originally to be used as ambulances. One-tenth

are vans or panel trucks; one-quarter are station wagons, and many are hearses. Moreover, fewer than one-third of the ambulances carry all the equipment recommended by the American College of Surgeons.

UNTRAINED ATTENDANTS

What is desperately needed is immediate lifesaving care by trained emergency medical technicians. The American

College of Surgeons and other professional organizations concerned with emergency medical care, such as the American Academy of Orthopaedic Surgeons, the American Association of Anaesthesiologists, the University Association of Emergency Medical Services and the American College of Emergency Physicians, have recommended that each ambulance carry a crew of two emergency medical technicians who have had a minimum of 70 hours of instruction plus 10 hours of emergency-room training. Only about 5 percent of ambulance attendants had received this recommended minimum training by 1970, and another 5 percent had received no training at all. In between, there were over 50 percent who had gone through an advanced first-aid course, and 33 percent had taken the standard 10- to 12-hour first-aid course. It is not surprising, therefore, to find that the Ambulance Association of America estimated in 1972 that 25,000 persons are permanently injured or killed by untrained ambulance attendants and rescue workers each year. Testifying before the Massachusetts Legislature on what was popularly called the "Ambulance Bill" (now Chapter 94B of the Acts of 1973), a spokesman for Blue Shield indicated that 1,871 persons had died needlessly in Massachusetts in 1972 because of inadequate emergency medical care.



Interior of ambulance.

AMBULANCE BILL

After 12 years of legislative hearings, debates and defeat, the Ambulance Bill was finally signed into law on October 24, 1973, "to insure high quality emergency medical care through regulation of ambulances and ambulance services." Under provisions of the law, the Department of Public Health may establish all rules and regulations for the establishment and maintenance of ambulance services, and for the operation of ambulances. The Department can also set minimum standards for personnel, training, vehicles, equipment, communications, medical supplies and records. Carrying out its legislative mandate, the Department will set up categories of vehicles, ambulance services and attendants throughout the Commonwealth. It will also issue licenses for ambulance

services and carry out periodic inspections of ambulances and any facilities and records that are maintained in connection with an ambulance service.

The provision for full compliance with the new standards for emergency vehicles and equipment will be phased in over the next two years. In the interim, the Department is writing rules and regulations that will specifically spell out these standards. After public hearing, the rules and regulations will be presented to the Public Health Council for adoption. A "grandfather's clause" allows the Department to license existing ambulances for a two-year period. Additional inspectors will have to be hired in 1975 to carry out the intent of the rules and regulations to be adopted.

ADVISORY BOARD

Professionals concerned with emergency medical services are united in the belief that the problem of inadequate services need not exist in this country, considering the availability of technology, knowledge and resources. The inadequacy of emergency medical care may be attributed to the failure of professionals, institutions, agencies and local governmental units to coordinate their existing resources. Lack of coordination and duplication on a local and state scale have contributed to producing an inefficient and wasteful sys-

tem. The new Massachusetts law seeks to overcome this deficiency by setting up within the Department of Public Health an Emergency Medical Care Advisory Board, with the Commissioner or his designee acting as chairman. Other state agencies will be represented by the Registrar of Motor Vehicles, the Commissioner of Public Safety, the Commissioner of the Metropolitan District Commission, and the Chief Executive Officer of each regional comprehensive planning agency. Twenty-one individuals who represent a broad cross-section of interest, including three consumers, will also sit on the Board. In addition to acting in a general advisory capacity, the Board will assist in coordinating the efforts of all persons and agencies in the Commonwealth concerned with emergency medical care.

To establish a successful emergency medical services system in Massachusetts, the Office of Emergency Medical Services stresses the importance of generating support among the general public. The great public interest mobilized in support of the Ambulance Bill was in large measure responsible for its passage. A continuing program of education to inform the people of the Commonwealth of the services available, and what to do when a medical emergency arises is being developed and will remain an important part of the EMS planning effort.

The Office of Emergency Medical Services is quick to point out that the activities outlined in this article will constitute only the basic elements of an emergency medical services system. Staff members do not, for the present, envision sophisticated systems that make routine use of helicopters or telemetry. They are more concerned with

establishing baseline data; with developing uniform criteria, standards and regulations; with coordinating efforts and resources in each region; with instituting training programs and with educating the public. Such an approach will lead to an EMS system that becomes an effective part of the total health care system.

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1. Hanlon, JJ: Emergency medical care as a comprehensive system. Health Services Report 88:579-587, Aug-Sept 1973.
2. Idem: p. 580.
3. Idem: p. 580-581.

responding to the cry

Perhaps no other individual involved in the delivery of emergency medical care is more aware of the thin line that separates success from failure, life from death, than the firefighter. Scarcely a day passes without an urgent cry for help - a tenement is burning, a child is suffering from smoke inhalation, a group of young people are trapped inside an overturned automobile. Because the firefighter has traditionally been the first to respond to the cry for help in these desperate situations, many fire departments have assumed a leading role in training their men in the many aspects of emergency medical care.

A two-day intensive course in auto extrication, held just prior to Labor Day 1973, was the brainchild of the Boston Fire Department and of the Boston Ambulance Squad. A volunteer organization that works in cooperation with the BFD, the Boston Ambulance Squad has a complement of 30 men who ride three ambulances. These volunteers work Mondays through Thursdays from 6:00 p.m. to midnight, and around the clock from Friday evening through Sunday midnight. The squads respond to all fire and smoke showing in Boston and stand by, ready to give emergency medical

treatment to citizens and firefighters in need.

A JOINT PROJECT

The Boston Fire Department had contacted Jeffrey Harris, Emergency Medical Services Project Coordinator of the Greater Boston Health Planning Council, to ask his help in providing special emergency medical care training to members of the two organizations. Harris, in turn, got in touch with Robert Murray, Jr., Director of Training, Office of Emergency Medical Services. Together, they worked out the two-day course on extrication and emergency care procedures in automobile accidents. Curriculum, visual aids, handouts and teaching aids were discussed and prepared; and final plans completed to hold the two-day training class at the headquarters of the Boston Fire Department. The course was financed by Massachusetts Blue Shield, through the efforts of Mr. Allen Giles, Executive Vice-President. Murray, co-author of "Emergency Care," a nationally recognized manual for the training of emergency technicians, developed the curriculum and served as head instructor. He was ably assisted by Lt. William Jaillet, Woburn Auxiliary Fire Department, and members of his squad.

LECTURES AND FILMS

Sixty-five men, mostly firefighters from the two rescue companies of the Boston Fire Department, plus ambulance attendants from the Boston Ambulance Squad, made up the student body. All day Saturday and Sunday morning, these men were in the classroom learning the skills of extrication, one part of the total Emergency Medical Services System. Through lectures and films, they acquired a deeper insight into the problems and responsibilities of each agency responding to a highway emergency - fire, police, ambulance and rescue. They learned how the role of each agency, the standardization of emergency care techniques and terminology, as well as a familiarization with first aid and rescue tools, bear upon the smoothness of the total operation at the scene of an emergency.

In addition, these dedicated men, many of whom had come from their 6:00 p.m. to 8:00 a.m. tours of duty and who went without sleep for 48 hours, received instruction in basic EMT knowledge. They learned how to clear obstructed airways, what to do to control bleeding, how to stabilize fractures, and what to do in treatment of shock. The use of

loads, lifts, carries and rope slings was demonstrated and practiced. The important techniques required for the successful extrication of the accident victim were discussed under four phases of the operation:

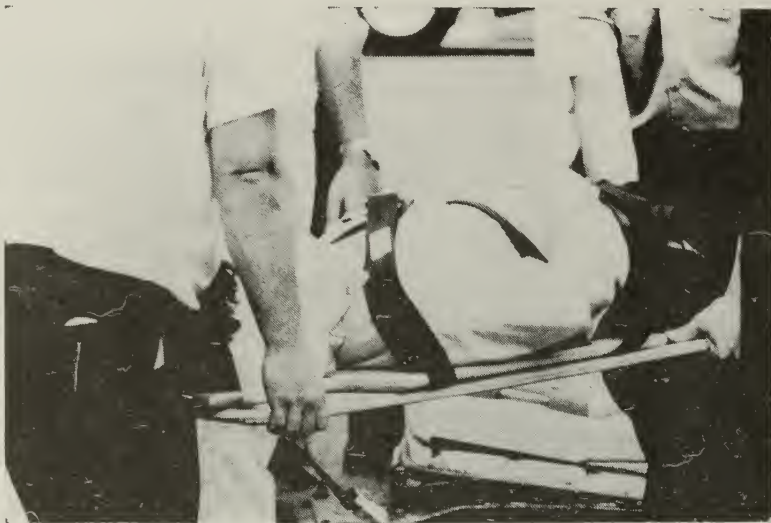
- *Access to the patient - one rescuer needed to gain immediate entrance into a vehicle to evaluate the extent of injury and to begin life-saving care.

- *Life-saving care given.

- *Preparation for removal of the victim.

- *Removal from the vehicle.

As part of the discussion on life-saving care administered, instructors reviewed rescue breathing in relation to the emergency created by the automobile accident. The proper use of a bag-mask resuscitator was demonstrated on volunteer victims, one sitting upright and the other lying on the floor. The demonstration reinforced the knowledge acquired through the viewing of a film on the subject. This was followed by a thorough review of one of the essential aspects of emergency medical care - artificial respiration.



Victim strapped to half and full spineboards.

USE OF SPINEBOARDS

Classroom instruction continued on Sunday morning, when basic emergency medical care was further discussed. Control of bleeding and care of fractures, conditions usually encountered in automobile accidents, were again emphasized. One facet of extrication that was strongly stressed was the use of half and full spineboards. Students learned to recognize possible neck and

back injuries, and the proper emergency care to give prior to removal of the victim from a wrecked vehicle. They were taught to apply manual traction to the head; the application of a cervical collar; and how to properly strap someone to the half spineboard. The half board, used in conjunction with a full spineboard, stabilizes the neck and spinal column to prevent possible spinal injury that could result in paraplegia or even death.

Sunday afternoon was spent in a junkyard in the vicinity of the Boston Fire Department Headquarters. Here the men were given a demonstration of the extrication equipment on wrecked autos in the yard. The students then went into the badly smashed cars to practice the proper methods of treating and extricating the victims. One of the demonstrations was of a tool known among rescue

workers as the "jaws of life." These metal jaws are run by a hydraulic pump that is capable of producing 10,000 pounds of pressure. When smaller tools prove unable to remove doors or other massive parts of a wrecked vehicle, the "jaws of life" can quickly pry and pull out large sections of metal to enable emergency workers to get into the vehicle and quickly remove the victim.



Learning to use "portapower" - to spring open car door.



Car extrication procedures.

EFFECTIVENESS OF COURSE

How effective was this two-day intensive course? In the opinion of Murray and Harris, the course has more than proved its value. As part of the course, a complete set of backboards was presented to each of the two rescue companies, which had not had the equipment until then. Twenty dollars of the money provided by Blue Shield bought the lumber and other supplies necessary for two sets. Volunteers from the Boston Ambulance Squad cut the boards, and did all the work, including sanding and shellacking the finished product. A short time after the completion of the course, Rescue Company 2 responded to an automobile accident and used the back-

boards on an injured woman. Examination of the patient in the hospital showed that she had fractured her back. If the backboards had not been used and the woman transported to an emergency facility without any support to her back, she could have suffered permanent paralysis.

Again, early in September, a truck hit an abutment and did extensive damage to itself and the Tobin Bridge. The Boston Fire Department called the Chelsea Fire Department and requested the use of Chelsea's "jaws of life" tool. Chelsea brought in the piece of equipment, which was used by Rescue Company 1 of the BFD to tear apart the cab of the wrecked truck and to facilitate the removal of the dead driver. As a result

of the efficiency demonstrated by the use of this equipment, the Boston Fire Department has found it advantageous to order a "jaws of life" tool for its rescue operations. Since Labor Day, the care given to victims of auto accidents by the Boston Fire Department rescue companies has, Murray believes, improved by 100 percent.

Another benefit of the course has been the great interest in emergency medical training it has engendered in other members of the BFD. Many of the original 65 students have enrolled in the 81-hour course for Emergency Medical Technicians now being held at the Peter Bent Brigham Hospital, and at the Labouré Junior College in conjunction with the Carney Hospital. Those firefighters and volunteer ambulance attendants who were unable to enroll in these courses will have an opportunity to participate in EMT courses to begin in the spring. The Office of Emergency Medical Services will soon have a network of such classes in operation throughout the state.

When a cry for help comes into the fire, ambulance, police or rescue company, the response in the near future, it is anticipated, will be immediate and effective. The thin line that separates success from failure, life from death, is being strengthened.

OFFICE OF
EMERGENCY
MEDICAL
SERVICES

80 Boylston Street
Boston, Mass. 02116
(617) 542-8784

Linda Leddy, Director
Robert H. Murray Jr.,
Director of Training

AMBULANCE ATTENDANTS NEED SPECIAL EDUCATION

The West German Federal Council is deliberating a proposed bill requiring a special two-year training course for ambulance attendants. In addition, the bill would introduce a state board examination for ambulance attendants before they begin employment. Today, sophisticated equipment and modern methods of first aid administration require special knowledge of those working in emergency services. Experience has proved that many life-saving measures should be applied directly at the accident scene, long before arrival at the hospital. Ambulance attendants have to be prepared to recognize serious emergency situations and to render aid as is needed without delay.

- JAMA, Vol. 227, No. 4, 1974.



Massachusetts Department of Public Health
Office of Health Education
600 Washington Street
Boston, Massachusetts 02111

Publication of this document approved by
Alfred C. Holland,
State Purchasing Agent. No. 15.

The Department complies with the
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COMMONHEALTH



Massachusetts department of public health

volume 3 number 2 spring 1974



This article is based on material supplied by Arthur M. Pappas, M.D., Acting Director, Division of Family Health Services; by staff of the Services for Handicapped Children, and by personnel in the field.

COMMONHEALTH

Spring 1974 Vol. 3, No. 2 (Series II)

Quarterly publication (Winter, Spring, Summer, Fall issues) of the
Massachusetts Department of
Public Health
600 Washington Street
Boston, Massachusetts 02111

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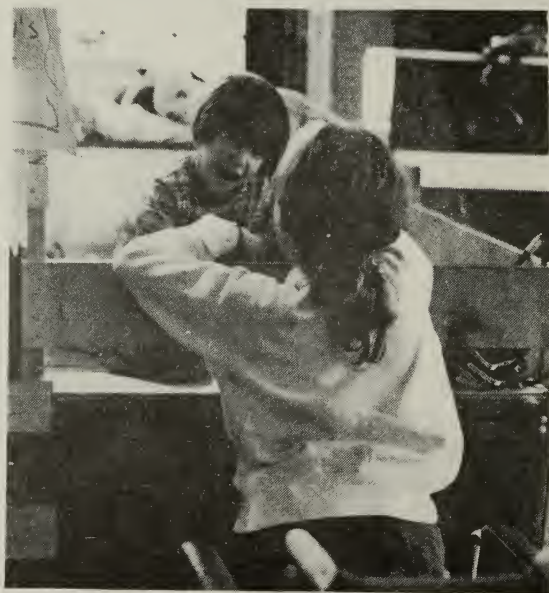
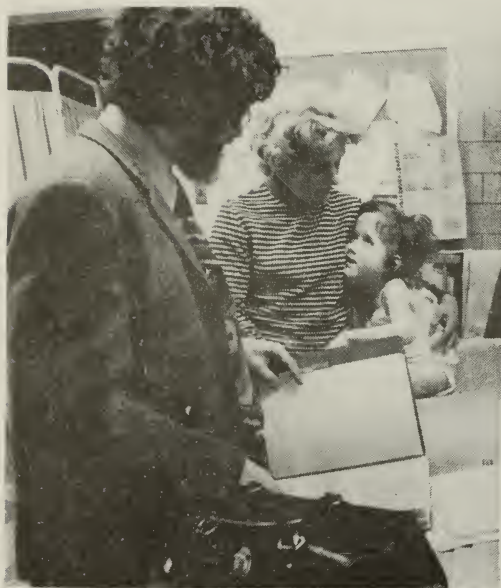
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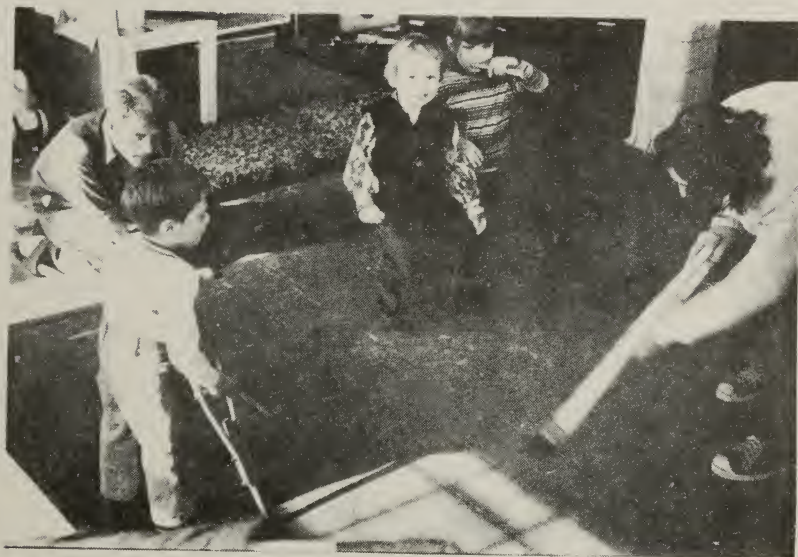
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handicapped children's services

PEARL K. RUSSO



handicapped children's services



The excitement was there - the youngster striving for a goal as the spectators cheered him on. "Come on, Don. Let's go! Get the puck! Good boy! Goal!" This was indoor hockey, but with a difference. Instead of a hockey stick, Don was

swinging at the puck with a crutch as he kept his balance with the help of the other small crutch. The bright, handsome child had, as an infant, undergone corrective surgery for spina bifida.

Eric and Elizabeth were busy, playing with building blocks and trains in the nursery. But, their unsteady gait and lack of coordination indicated that these two-year olds were suffering from cerebral palsy.

At two months of age, tiny Basil was the youngest patient in the cardiac clinic. He had been weighed and measured, and had just had an electrocardiogram. Now he was crying lustily as his parents waited for the cardiologist to complete the examination.

Although John and Mary are in their late teens, they still receive free medication - for John, a hemophiliac, to prevent spontaneous bleeding that could lead to degenerative joint disease; for Mary, an epileptic, to keep her seizures under control.

What do these children, with such a wide range of disabilities, have in common? All receive help, whether in the form of services or medication, or both, from the Department of Public Health through its Services for Handicapped Children (formerly called Services for Crippled Children).

Social Security

These services are now 38 years old. Under the Social Security Act of 1935, the Children's Bureau received the authority to assist the states in develop-

ing programs of care for crippled children. The objective remains unaltered: to locate handicapped children in need of treatment and to provide diagnostic, medical and surgical care, as well as to ameliorate those unfavorable social and psychological influences that contribute to the severity of the disability.

The programs for these children were the first for medical care based on the principle of continuing federal grants-in-aid to the individual states. An enabling act of the Massachusetts General Court in 1935 empowered the Department of Public Health to receive and administer the grants. Following approval of a state plan and budget by the Children's Bureau, the Massachusetts Services for Crippled Children was established in 1936.

Increased Services

The first programs developed in the Commonwealth were for children with orthopedic and plastic defects. Over the years, however, the types and incidence of orthopedic handicaps have changed greatly. Bone tuberculosis, rickets, poliomyelitis, once common illnesses, have practically vanished from the state. The development of antibiotics changed the status of osteomyelitis, which was responsible for a large group of the early long-term patients.

As additional state and federal funds became available, states broadened their interpretation of crippling conditions.

Since 1939, when Congress increased the appropriation for crippled children's services to include children with rheumatic fever, new programs have come into existence. Today, teams of medical consultants, working with psychologists, physical therapists, nurses, social workers and administrative staff, provide services in clinics throughout the state that are operated or supported by the Services for Handicapped Children. In addition to the original clinics in orthopedics and plastic defects, there are now clinics in neurology, cardiology, myelodysplasia, multiple handicaps, and chronic diseases such as inborn errors of metabolism.

The program today serves over 6,000 children and their families in Massachusetts. These children are treated from the time of referral to the program until they reach the age of 21. In addition to diagnostic work-up in medical facilities on an inpatient or outpatient basis, the patients are referred for specialized consultation when required. The clinics provide medication, appropriate appliances and surgery, if indicated, to children whose parents are unable to provide necessary care. The same team that sees the child at the clinic coordinates and contributes to his care at other levels of medical delivery to ensure continuous service.

Because the problems of the handicapped child are many, not the least of which are emotional and social, the

success of the Services for Handicapped Children depends not only upon the resources provided by the Department of Public Health, but upon the cooperation of many health professionals. Physicians, nurses, social workers, hospital administrators, early childhood educators, vocational guidance counselors, as well as volunteer agencies, all play an important role in the care and rehabilitation of the handicapped child.

THE NURSERY PROJECT

The nursery was bright and colorful. Each crib had its own cheerful mobile overhead or toy tied to the rails. The play areas were crammed with toys of all kinds - blocks, dolls, doll houses, carts, wagons, trains, musical instruments. Mothers and staff personnel went about their tasks quietly, efficiently. It was a nursery like many other nurseries where parents are encouraged to come and actively participate in the program. The children were not, however, the usual youngsters in a nursery setting. The five were handicapped children in the nursery located on the grounds of the Massachusetts Hospital School in Canton, the Department of Public Health's unique resident school that offers complete hospital facilities and education for the physically handicapped child.

In operation since May 1973, the nursery provides a program of from four to six weeks duration for infants

from birth to five years of age. The original concept was to provide services for children with spina bifida, but the program has expanded to include the child with a number of handicapping conditions. On a visiting day in February, the five youngsters, all about two years of age, were suffering from cerebral palsy, brain damage, and tuberous sclerosis, a familial disease marked by progressive mental deterioration and epileptic convulsions.

Intervention Program

Described by staff as a "short-term intervention program," its purpose is to initiate an early rehabilitation plan that can be implemented in the home. It is basically a school for parents, who are urged to come in at least three times a week to work with the staff and to learn the techniques of dealing with the child at home. Parents may, if they so desire, stay overnight in quarters provided by the program. Fathers, as well as mothers, are encouraged to take part in caring for their children, a practice that is facilitated by the 24-hour visiting privileges for only the nursery. Parents or other members of the family are invited to come in at meal time to help feed the youngsters.

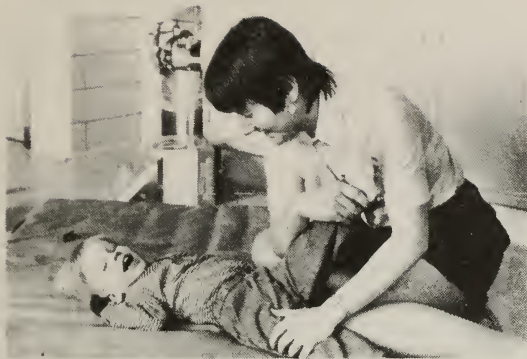
Infants and young children are referred to the nursery project by Visiting Nurse Associations, directly from the Massachusetts Hospital School, or by private physicians. During the infant's admission period, the staff does not provide agres-

sive medical treatment. A pediatrician offers genetic counseling and consultation on the particular aspects of the handicap that will require continued care in the home.

Team Approach

Basic to the success of the nursery program is the team approach. The pediatrician, primary nurse, occupational therapist, physical therapist, nutritionist, social worker and family counselor, all work with the parents in planning a comprehensive program of care for each child. The developmental evaluation of the child is carried out jointly by the pediatrician and occupational therapist. The occupational therapist is concerned with the functional and developmental levels of each child in five major areas: gross motor, fine motor coordination, self-help skills, language and play skills. Following the evaluation, parents receive instruction in techniques to encourage developmental progress in motor functioning. They also receive advice on the kinds of toys and play activities that are appropriate to the developmental level of the child, and on ways to promote self-help.

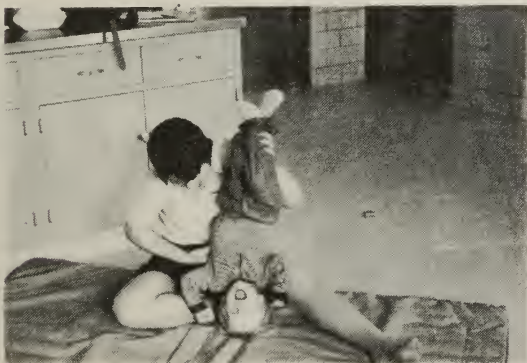
The physical therapist evaluates each physically handicapped infant and child for mobility, range of motion, strength and neuromotor characteristics, if present. She performs daily physical therapy for each child who has specific orders from the physician. What looked like casual play to the untutored visitor



was, in effect, very carefully structured activity geared to the individual child's disability. The physical therapist sat on a mat on the floor with Eric and went through a brief routine that had the youngster laughing as he strove to maintain his balance. The purpose was to develop Eric's motor functioning through basic techniques of therapy that were being taught to his parents.



Both the O.T. and P.T. discuss their findings with the parents, who may thus learn for the first time what to expect of their children. Knowledge of the child's level of development and potential for improvement is a great source of strength to the family who wishes to keep the child at home.



Additional support comes from the nutritionist, who works part-time with the nursery program. She is directly involved with the family and counsels on basic family nutrition. In addition, she makes recommendations on diet when there are problems of food intake and nutritional deficiencies. Inviting parents to help feed the youngsters in the nursery serves two purposes: to assist the nursery staff and, more importantly, to teach parents the special techniques of feeding the child with a handicap.

Family Counseling

An important aspect of the program is the family counseling, which is usually carried out by the social worker. Group

or private sessions are available to help work out emotional problems. Whenever possible, normal siblings of the handicapped child are encouraged to participate in the care of the less fortunate brother or sister. The nonhandicapped offspring are able to attend the Baylies Beginning Center on the grounds of the Hospital School. Here they learn at first hand how handicapped and non-handicapped children can work and play together.

The social worker is essential to the successful coordination of all aspects of the total care of the child. Home visits prepare the family prior to the infant or child's admission to the nursery. Follow-up visits after discharge continue to give aid and support to the entire family in locating community resources, and in arranging for continued care and treatment.

If the psychological problems presented by an individual child require the attention of an additional professional, a psychologist is available to work out a joint treatment approach with the social worker. Initial testing is done by the pediatrician and social worker. Should any severe psychiatric problems show up, the nursery staff can call for a psychiatric consultation.

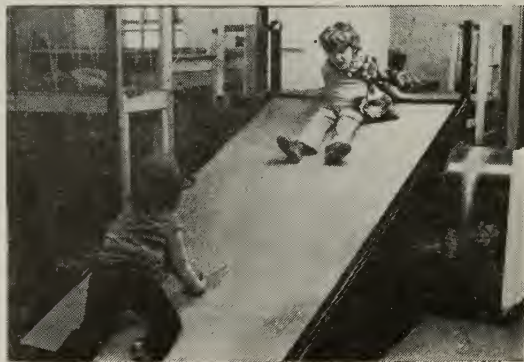
Continuity of care is assured by the careful compilation of medical information and data obtained when the infant is admitted to the nursery. The medical

record is made available to any medical specialists or other programs that will follow the infant in his locality.

Initial funding for the nursery project, now an active reference center for parents of handicapped children, came from the Office of Children. Its operation and funding are currently the responsibility of the Division of Family Health Services. Plans for the future are to place the nursery project in the budget and facilities of the Massachusetts Hospital School, with its many years of experience in providing services to the handicapped child.

PRESCHOOLS FOR THE HANDICAPPED

The three playrooms varied in size but the atmosphere in all of them was the same. Inexpensive equipment, most of it hand-made and sturdy, reflected the wide range of activity in progress. Play areas on different levels, slides, steps,



swings, a corner for blocks, books, paints and crayons, musical instruments, plants and tropical fish - these were the familiar equipment of the standard preschool. The children, whose ages ranged from three to six, were happily busy in a variety of activities. Some scrambled expertly up the inclines; others moved slowly and laboriously on crutches or by pushing small metal walkers.

These were youngsters enrolled at the three preschools for handicapped and nonhandicapped children that had been established by the Division of Family Health Services within the last few years. The schools are the Dimock Street Preschool in Roxbury, the Anne Sullivan Day Care Center at the Tewksbury Hospital, and the Baylies Beginning Center at the Massachusetts Hospital School. Although the number of children enrolled may differ, as do their backgrounds, the purpose of the three schools and their underlying philosophy are the same - to provide an integrated experience for handicapped children and to help them develop and perform at higher levels than they themselves believe possible.

Integrated Nursery

The Dimock Street Preschool, when visited in March, had an enrollment of 30 children, of whom 20 were handicapped. Because this is the only school of its kind in the Greater Boston Area,

handicapped youngsters come from as far away as Medford. The nonhandicapped are the neighborhood children whose parents transport them to the school. Unlike the other two schools, Dimock Street has a mix of half white and half black and Spanish-speaking children, a truly integrated nursery.

The Anne Sullivan Center in Tewksbury had an enrollment of 40, of whom 19 had physical disabilities. The program also included five "battered children" and children without disabilities who come from homes that receive welfare aid.



Four times a week, handicapped children from the new unit at the Tewksbury Hospital join the activities at the preschool.



Twenty-four children, from their own homes and from the Massachusetts Hospital School, take part in the morning preschool program at the Baylies Begin-

ning Center. Ten of the older children remain for an afternoon enrichment program in the first-grade classroom of the Hospital School.



The physical disabilities of the youngsters are the same in the three schools - spina bifida, cerebral palsy, brain damage, muscular dystrophy, and an occasional case of arthrogryposis. Since the problems and their solutions are similar, the three schools operate on the principle of the open classroom. The children make the decisions on what they want to do. Group activities form



and break up at will. One child may sit before an easel and start to paint and soon have two companions flanking him. Preparation of lunch at the Anne Sullivan Center and at Dimock Street becomes a group activity with youngsters, handicapped and nonhandicapped, helping to



set the table or cutting up fruit and vegetables for a new juicer. A child can retire to a corner and look at books, play a musical instrument, bounce a ball or play in the sandbox. But, throughout the classroom are members of the staff to work with an individual child or with groups of children and to guide the activities.



Play Therapy

In addition to teachers, the teams include physical therapists, occupational therapists, speech therapists, social workers and related personnel. The approach is to integrate therapy into the regular classroom activities. For example, a teacher and a small group of youngsters were singing along with a Woody Guthrie record, "Wake up, wake up. Stretch your hands, stretch



your fingers. Stretch your legs, stretch your toes." As they sang, the teacher did stretching exercises on a child with cerebral palsy. The hockey game little Don had been playing at the Baylies Beginning Center was more than a sport. It had been devised to get youngsters out of wheelchairs and to start functioning on crutches.

The physical construction of the classrooms is also designed to stimulate gross motor activity. The structures themselves encourage the child to take risks - to try to climb the stairs and ramps to get from one level to another. The presence of nonhandicapped children, with their broader experiences, serves as an example and catalyst to the handicapped. To "deinstitutionalize" the experiences of the handicapped, the schools organize daily walks and field trips. The youngsters at Dimock Street are fortunate to have the facilities of the Brookline High School pool for swimming twice a week. An institutionalized child frequently lacks the very experience he requires to develop social and emotional stability. The programs, therefore, put great stress on social and emotional growth, and have been successful in building a cooperative community of children with extreme differences in their level of skills.

In the three schools, the ratio of staff to children is approximately four to one. College and high school students, some participating in work-study programs,

provide extra help and skills. Parents are another great reservoir of help, and are encouraged to play an active role in the schools. In addition to accompanying children on their field trips and working directly in the preschool, parents are urged to attend weekly staff meetings and to take a prominent role in making decisions. A discussion group for mothers of the handicapped children meets weekly with the social worker to "talk out" some of the problems of raising a handicapped child and to gain strength from the collective experience.

The three programs are working to develop community involvement that will encourage local public schools and community organizations to integrate the physically handicapped child into their existing programs, especially into kindergarten and primary grades. The passage of Chapter 766, the Massachusetts special education law, makes cities and towns responsible for educating the physically and mentally handicapped child. Before this can be done, communities will require more information on the advantages and problems that the integration of normal and handicapped children in public school classrooms will bring. They will have to identify the special services required to ease the entry of the handicapped child into

his community. The experiences of the Department of Public Health's preschools for the handicapped child are an important resource for those communities and interested school administrators who will be opening their classrooms to the handicapped child.

The rationale behind the integrated preschools was succinctly expressed by one director: "The kids heal each other." But, beyond that are the dedication and loving care given each child. The following quote from Alfred Adler sums up what the Department and the Services for Handicapped Children seek to accomplish:

"When a child is robbed of her/his faith in the future, the result is that she/he withdraws from reality and builds up a compensatory striving on the useless side of life. An educator's/parent's task - one might almost say her/his holy duty - is to see to it that no child is discouraged at school and that a child who enters school already discouraged regains her/his confidence in herself/himself through her/his school and teacher. This goes hand in hand with the vocation of the teacher/parent, for no education is possible except with children who look hopefully and joyfully upon the future."

MYELOYDYSPLASIA CLINIC

To the untrained eye, the scene was one of utter confusion. Physicians, nurses and other personnel moved from bed to bed in no apparent pattern. Frequently, five or six adults stood around



a small child on crutches and carried on an animated discussion. From time to time, a physician walked to the opposite end of the room to talk into a tape recorder. Out of the various pieces of information and activity, a clear pattern of purpose and care emerged.

This was the monthly meeting of the myelodysplasia clinic of the Department of Public Health that is held at the Massachusetts Hospital School. In attendance were pediatricians, urologists, orthopedic surgeons, neurosurgeons, staff members of the School or consultants from Boston and other cities in the state. Nurses, social workers, physical therapists, occupational therapists and ad-

ministrative personnel completed the team.

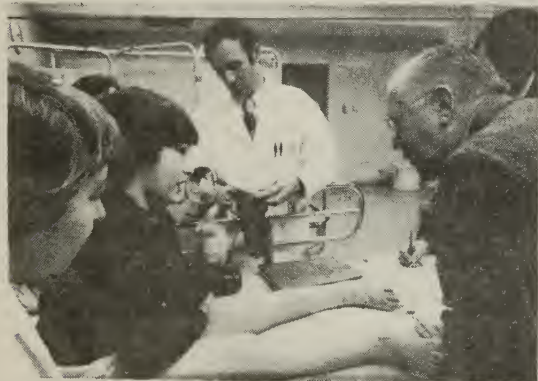
Until January 1972, there was no state-operated clinic in Massachusetts to deal with the multiple medical and social needs of the child with myelodysplasia. Myelodysplasias that result from incomplete closure of the neural tube during the fourth week of gestation are among the most common congenital malformations in the United States. Spina bifida, both with and without hydrocephalus, accounts for approximately 20 percent of all central-nervous system malformations. These in turn account for 60 percent of all congenital malformations, and are responsible for more than 0.5 percent of all deaths. Improved medical and surgical techniques have, however, increased the survival rate of these infants, all of whom are in need of special care for long periods.

A Special Challenge

The child with myelodysplasia presents a special challenge to health professionals to provide total coordinated care because of his multiple medical and social needs. Paralysis below the waist, the result of spinal-nerve damage, is frequent and requires the attention of many specialists to handle the problems of ambulation, bladder control and bowel function. Depending upon the severity of the spinal-nerve impairment, a child may suffer from mental retardation, neuromuscular disabilities, seizures and learning difficulties. These handicaps, which are

frequently compounded by emotional and social adjustment problems, vary enormously. All children with these disorders, however, require a multidisciplinary approach to their specific problems.

The clinic at Canton, modeling itself after a center for coordinated care in Oxford, England, that has been dealing successfully with the varied problems of children with myelodysplasia, has developed an integrated approach to the



individual child. The team of professionals, competent in various fields, are able to provide assessment, neonatal surgery when necessary, and multidisciplinary treatment. Corrective surgery has been performed on children as late as their twelfth year. The first clinic sessions saw only four patients from the Hospital School, but the list of patients soon grew to approximately 24 inpatients and about the same number of outpatients, including children from the Belchertown School for the Retarded.

Although clinic sessions are held once a month, some patients are seen every second or third month, depending upon their rate of progress. Each patient has a physical examination, additional X-rays when needed, and other laboratory



tests. After each examination, the individual physician writes progress notes and immediately dictates his findings into a recording machine. These notes are then transcribed into the patient's record. The special record form devised for the clinic has a different color paper for each of the five distinct services: orthopedics, pediatrics, neurosurgery, neurology and urology. In addition, there are pages for nurse's notes, head measurements, notes from the social worker, physical therapist and

occupational therapist, and for laboratory and X-ray findings. This very effective record permits any physician or consultant to find without any difficulty the information he wishes.

Postclinic Conference

Later in the afternoon, the physicians and other personnel participate in a postclinic conference where each child's condition and progress are discussed. For example, one pediatrician suggested that an adolescent patient be seen by a dentist. The orthopedic surgeon reported that the girl's gait had retrogressed and that there was an increase in spasticity. Did this, he questioned, have to do with her hydrocephalus? The recommendation was made that she be seen again in the clinic scheduled for the following month. The eating habits of another patient were a matter of grave concern to the entire team, and steps were taken to help the family with this problem. And so it went until each child had been discussed and proposals made for treatment and rehabilitation.

Although clinic sessions are held once a month, follow-up observation is provided for problems that may arise between clinics. Essential to the success of the program is the education of the parents. This is primarily carried out by the social workers in the communities in which the families reside, or by the social workers at the Hospital School. Home treatment plans for therapy re-

ceive special emphasis, and the staff of the Massachusetts Hospital School is always available to provide consultation.

The children who are residents at the Hospital School receive schooling and vocational training to enable them to function in the world outside the hospital walls. Those children who are at home are being helped to enroll in schools in the communities.

Since January 1973, a second myelodysplasia clinic has been in operation at the Tewksbury Hospital. Meeting once a month, the clinic sees an average of 10 patients out of its total roster of between 30 to 35. All the activities described for the clinic at the Massachusetts Hospital School are carried out at Tewksbury, which is fast becoming the resource center for children with myelodysplasia and for their families in the northeastern region of the state.

By providing medical management, guidance and support, the Department of Public Health is helping parents to adjust to the many problems that arise, and to provide the child who has myelodysplasia with opportunities for growth and development.

EPILEPSY CONTROL PROGRAM

Although epilepsy is a serious social and public-health problem, no accurate

figures on the number of persons with convulsive disorders are available. The Epilepsy Foundation of America estimated that at least two percent of the population in the United States, or about four million persons, have some form of epilepsy. The National Institute of Neurological Diseases and Stroke, National Institutes of Health, uses a prevalence figure of one percent, or about two million individuals. On the basis of the 2 percent estimate, the incidence of epilepsy in Massachusetts would reach 110,000.

Epilepsy is one of the oldest ailments known to man, yet it remains one of the least understood maladies in the world. Investigators agree, however, that epilepsy is not a disease but a group of symptoms and responses that can occur in any living animal if the brain is sufficiently stimulated or irritated. What are the causes of this illness? They are multiple. About 50 percent of all epilepsies are due to either genetic anomalies, disorders during intrauterine life, trauma to the brain, infections of the meninges, degenerative diseases, tumors of the brain or rare metabolic disorders. Another 40 percent are idiopathic, without any known cause, and the remaining 10 percent have some hereditary element.

Early Treatment

Most individuals who are afflicted with epilepsy acquired the malady during

childhood. One investigator is of the opinion that in approximately 90 percent of all patients, the initial symptoms develop before the age of 20. Given proper diagnostic care and effective anti-convulsant drug treatment, most children with epilepsy can develop into effective productive adults. Early treatment of these children is vital.

Funds appropriated by the Legislature since 1968 have helped to develop the Epilepsy Control Program. The Program provides the following services for patients with seizure disorders: neurologic consultation and treatment through community-based clinics; provision of anti-convulsant medication; financial assistance for electroencephalographs, laboratory tests and limited hospitalization for diagnosis and emergency treatment.

The Handicapped Children's Program and the Epilepsy Control Program have jointly established outpatient neurology clinics for patients who cannot easily reach the medical centers of Boston. Clinics are now in operation at the Tewksbury Hospital; Barnstable County Hospital, Pocasset; Hubbard Regional Hospital, Webster; Harrington Hospital, Southbridge; Lakeville Hospital; and the Berkshire Medical Center, Pittsfield. The Program also provides services by contract with the Kennedy Memorial Hospital in Boston. At the present time, the overall clinic population is about 200. In addition, the Epilepsy Control

Program assumes responsibility for the bills for services to children with convulsive seizures at the Children's Hospital Medical Center, Boston Floating Hospital and the Massachusetts General Hospital.

Community Education

Community education is an important component of the Epilepsy Control Program, and is geared to break down prejudices against and to correct misconceptions about epileptics. One of the goals of the program is the establishment of a program of education for parents of patients seen at the clinics. This is essential to obtaining the wholehearted support of the parents in the overall management of the child with seizures.

Equally important are the inservice training and educational programs conducted at the local, regional and state levels to train other professionals in the diagnosis and treatment of the epileptic patient. The need for such conferences was underscored by the broad response to the first statewide epilepsy conference held in November 1973 at the Worcester Foundation for Experimental Biology. More than 375 persons - physicians, nurses, educators, social workers and rehabilitation counselors - attended the all day conference. A regional conference, planned by physicians, nurses and lay people in the community, brought out 200 individuals for a similar meeting in the western part of the state.

An important adjunct to the Epilepsy Control Program is the blood testing that is done at the State Laboratory Institute. Using the serum-scan technique (gas-liquid chromatography), the Laboratory is able to give physicians an accurate reading of the amount and adequacy of the medication they are prescribing. This important pilot project recently completed studies of blood levels at the Monson State Hospital. The blood testing program is now being extended to other state facilities. The setting up of additional state clinics in areas where they are needed is under study at the present time.

MULTIPLY HANDICAPPED CHILD

Despite the increase in the number of services to the handicapped child in Massachusetts, there is a group of children with profound multiple handicaps whose needs are critical but which are as yet largely unmet. Many of these severely handicapped children, some of whom are both mentally and physically handicapped, are living at home with families who receive little if any professional or financial support for their care. Other children are inappropriately placed in state facilities or acute care hospitals where they are unable to receive the long-term rehabilitative or habilitative program planning needed for meaningful care.

One step in the direction of ameliorating this situation came in 1971, when

the Massachusetts Legislature passed Chapter 1084. This law gave the Department of Public Health the responsibility to license pediatric units in nursing homes to care for some of these children. In fiscal 1974, the Legislature appropriated funds to the Division of Family Health Services to be used for the development of rehabilitative services to children with multiple handicaps. Approximately 400 of these children have, to the present time, been identified and referred to the Division of Family Health Services. Most of the children are under eight years of age and include an increasing number of infants who, because of advances in medical technology, are surviving beyond the first few weeks of life. The majority have severe congenital defects, but some are the victims of childhood accidents - near drownings and automobile crashes. Others have been devastated by secondary infections following childhood diseases.

Medical Review Team

Because only a small percentage of these children are eligible for Medicaid, the Department of Public Health must use its funds to purchase and develop the appropriate services. From current medical and social intake information, the Medical Review Team of Family Health Services establishes the child's eligibility to participate in the program. Once a child is found eligible, the Pro-

gram provides for a complete evaluation to establish the patient's current level of functioning, to identify his strengths and to develop a patient care plan. The Medical Review Team is then responsible for the implementation of the patient care plan through the purchase of services. The services are many and may include but not be limited to: short or long-term residential rehabilitation at a pediatric nursing home, intensive therapeutic day care, parent training and counseling, referral to a medical specialist, and nursing support and therapy provided in the home.

The evaluation and care of the child with multiple handicaps are the same as that used in all the other programs under the aegis of Services for Handicapped Children - a multidisciplinary team approach that includes pediatricians, medical specialists, nurses, social workers and therapists. The child and his program are reevaluated at appropriate intervals to determine any change in his functioning level. The Medical Review Team is again responsible for seeing that the patient care plan is being followed. If the child's reassessment requires a change in his program, the Medical Review Team makes certain that the plan is modified and maintained to provide greater stimulation to the child's development and improvement.

Splintered Services

Very little is known about the potential

of children with multiple handicaps in contrast to the sizable body of information about their deficiencies. Community services, if at all available, are splintered and inadequate to provide the mother with the technical assistance and support to which she is entitled if she wishes to keep her child at home. The Department is seeking to overcome these inadequacies by adding to the staff of Services to Children with Multiple Handicaps, by training and educating more people to understand the scope of the problem, and by developing additional programs.

The role of the parents has been expanded to one of active participants in their child's rehabilitation. Education of the family makes this possible. They are learning how to use exercises, games and toys as an essential part of therapy. A knowledge of feeding methods and developmental stimulation makes home care of the handicapped child a reasonable and feasible alternative to institutional care. Supporting parents in what is frequently a difficult decision - to keep their child at home - is an essential part of the program for the multiply handicapped child. The services of the social worker, in cooperation with a psychologist when needed, are in effect the glue that keeps all the pieces together.

The aim of the program is to identify every multiply handicapped child in Massachusetts, to help him develop to

the extent of his ability, and to guarantee that he will not become a forgotten child of the Commonwealth.

HANDICAPPED CHILDREN'S UNIT TEWKSBURY HOSPITAL

The two-bed room was new, sunny and bright. The two young occupants joshed each other and giggled when asked if they would like to have their pictures taken. Although they were in



traction, they were full of good spirits and laughed as do most 12-year old boys. Kevin had come in for additional surgery to remedy the joint contractures of hips and knees, the result of myelodysplasia. The traction was part of the treatment to stretch out the deformities. Bobby was in for medical care and rehabilitation to correct hip joints deformed by Legge-Calve-Perthes disease.

In a room across the hall that was similarly furnished and just as cheery, two young boys sat quietly in their beds. Retardates from the Belchertown School, they were awaiting orthopedic surgery the following morning.

Further down the corridor, children slept or lay motionless in their spotless beds and cribs. Janie smiled wanly but made no other move as the visitors greeted her. Although she looked like a six-year old, she was in truth 16, a



severely retarded child with cerebral palsy. In an adjacent room, one child sat completely undressed in her crib, as another tried to wiggle out of her clothes. Both these young girls suffered from Downes syndrome. Little Benjie, a four-year old, played silently with his fingers as he rested in his special crib that was completely enclosed. A "rubella baby," he could neither see nor hear.

These children were patients in the newly opened Handicapped Children's

Unit of the Tewksbury Hospital. The unit officially opened in January 1974, to serve multiply handicapped children in the northeastern region of the state.

Three - fold Purpose

The three types of patients seen on a visiting day in March indicate the three-fold purpose of the new unit. First is the provision of inpatient services to children from the clinical population of the region. For the first time, children seen in the orthopedic, neurologic, cardiac, myelodysplasia and multiply handicapped clinics are being admitted to a state facility for inpatient surgical and medical care, and for physical therapy. The new inpatient unit is an integral part of the whole program for handicapped children that operates through the several clinics supported by the Division of Family Health Services. Staff from the Northeastern Regional Office and from the Tewksbury Hospital provide the services to the unit.

The same physician who treats the child at the clinic admits the patient to the hospital unit and manages his care there. The children in this first group are inpatients for periods ranging from one week to three months. A special staff of highly trained nurses, therapists, social workers, technicians and a full-time pediatrician have been assigned to this unit, which has the capability of offering an almost complete package of care. Members of the pro-

professional team are reaching out to develop better relationships with other agencies, professionals, school systems and communities. The aim of the multidisciplinary team is to provide the proper training and counseling and education to parents and the public to make it possible for the handicapped youngster to be placed in the proper therapeutic and school environment.

Second is the provision of services to children with retardation handicaps as well as physical disabilities. These children are coming from three Department of Mental Health facilities for the retarded - Belchertown, Monson and Hogan - primarily for orthopedic and reconstructive surgery.

Intensive Evaluation

The third thrust of the program is the intensive evaluation of children accepted on the program of Services to Children with Multiple Handicaps. The 20 children who comprised the greatest number of patients on the March visiting day were severely retarded patients from the chronic mental retardation unit of the old Tewksbury Hospital. Their ages ranged from one and a half to 22 years. The lack of a systematic program to deal with the problems of such children on a statewide level, as well as the shortage of proper places for referral, resulted in a situation where these children received only custodial care. Some of them have been at

Tewksbury since infancy, and little is known about their potential.

The pediatrician and her staff and consulting specialists are now examining these children, making an assessment of their conditions, and drawing up a patient care plan. Recommendations are being made for follow-up care and for placement in the most advantageous environment, whether it be a foster home, a pediatric nursing home, a school for the retarded or blind, or care at home. Because the problem of working with the multiply handicapped child is so complex, implementation of any plan requires good linkage with the schools, regional agencies and community groups.

At the present time, the Handicapped Children's Unit at the Tewksbury Hospital has a daily census of 25-30. When additional funds are made available for increased nursing and other staff, the unit will be able to open up all its facilities to accommodate 55 patients.

Although the Medical Director indicated that the actual number of multiply handicapped children in the northeastern region of the state is unknown, those involved in the Program estimate a figure of several thousand. The goal of the Handicapped Children's Unit at the Tewksbury Hospital is to find the children in need of care, to ascertain who, if anyone, is serving their needs, and to guarantee that the children receive necessary therapeutic and rehabilitative care.

CONTINUING PROGRAMS

Services for Handicapped Children have, since 1936, provided services to children with a wide range of disabilities. These include children with cardiac problems, scoliosis, cystic fibrosis, hemophilia and hearing problems. The type of services made available by the Department of Public Health varies according to the disability. The Cystic Fibrosis Program, for example, does not itself provide services to the patient. Rather, it reimburses the cost of certain services to the patient through hospital clinics approved by the Department. During the two-year period from July 1, 1971 to June 30, 1973, the Program reimbursed these clinics for \$549,810 for the care of 579 cystic fibrosis patients.

Although the Department has been providing care for hemophiliac patients for many years, Chapter 1227 of the General Laws, which became effective on December 12, 1973, broadened the role and responsibilities of the Department in the treatment of persons suffering from hemophilia. To assist the Department in carrying out its legislative mandate, the Commissioner of Public Health is now in the process of appointing a Hemophilia Advisory Committee. In addition to extending financial assistance to hemophiliacs, the Department will assist in the development and expansion of programs for the care and treatment of such persons, including self-administration, prevention and home care.

ADJUNCT PROGRAMS

Two programs within the Division of Family Health Services are vital to the prevention of handicapping conditions. Relatively new within the Department is the genetic counseling that is available to all parents of handicapped children in the Department's clinics and hospitals.

The second is the statewide program to promote full use of Rh immune globulin to prevent sensitization of an Rh negative mother after the birth of an Rh positive infant. Each year, approximately 1,000 to 1,500 babies who are potential victims of erythroblastosis fetalis are born in Massachusetts. This destructive disease, the result of Rh incompatibility, often leads to the birth of infants with such conditions as cerebral palsy, mental retardation, prematurity resulting in blindness or ataxia, kernicterus (a condition with severe neural symptoms followed by convulsions and brain damage).

Since January 1972, the Department of Public Health has made Rh immune globulin available at no charge to every hospital in the state that has an obstetrical service. In the calendar year 1973, the number of doses used for general distribution reached 7,617, and the rate is steadily rising. The efficacy of the Massachusetts Rh (D) immune globulin (human) is evident from the following data obtained at several Boston hospi-

tals: As of February 15, 1974, 2,104 Rh (D) negative mothers in these hospitals had received the immune globulin within 72 hours of delivery of an ABO compatible, Rh (D) positive baby. None of the 741 recipients who had follow-up tests at three or six months postpartum had evidence of sensitization when tested for antibody. The second pregnancy of 161 mothers and the third pregnancy of five mothers who had received the globulin also showed no evidence of sensitization.

An important step in the goal of eliminating erythroblastosis fetalis is the education of groups that work with woman of childbearing age - family planning, pregnancy counseling and planned parent-

hood agencies. The Department has instructed such groups in the importance of alerting the Rh negative woman to the need of Rh immune globulin after a miscarriage, abortion or full term pregnancy.

Approximately 8,500 doses of Rh immune globulin were prepared at the Biologic Laboratories of the State Laboratory Institute in 1973, at a cost much less than if purchased from commercial laboratories. The total price is small compared to the millions of dollars that the Commonwealth must spend for the home or institutional care of the handicapped child. Compared to the savings in human lives and potential, it is infinitesimal.



Massachusetts Department of Public Health
Office of Health Education
600 Washington Street
Boston, Massachusetts 02111

Publication of this document approved by
Alfred C. Holland,
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COMMON HEALTH



Massachusetts department of public health

Volume 3 number 3 summer 1974

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COMMONHEALTH

Summer 1974 Vol. 3, No. 3 (Series II)

Quarterly publication (Winter, Spring, Summer, Fall issues) of the
Massachusetts Department of
Public Health
600 Washington Street
Boston, Massachusetts 02111

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THE STREETS OF BOSTON

The KIDS and the People who help
them

Marc N. Manger and Linda Temoshok

Mr. Manger is a medical student at Tufts University School of Medicine, Boston, Massachusetts; Miss Temoshok is a graduate student at the Research Center, Group Dynamics, Institute for Social Research, Ann Arbor, Michigan.

Exerpts from paper presented before the Maternal and Child Health Section of the American Public Health Association, at its Annual Meeting, November 7, 1973, San Francisco, California.

The Boston area's "street scene," the youth population and its lifestyles, has changed gradually yet dramatically during recent years. The summer of 1970 was the Golden Age of runaways and street people. This blossoming of the "flower children," of grass and love, saw more than 30,000 transients making the Boston scene.¹ In 1971, as the romantic image of street life faded, there were fewer young people; and during our research in the summer of 1972, there was only a fraction of the number seen in 1970. Follow-up interviews, which we conducted in the fall of 1973, of knowledgeable sources indicate that while the number of street kids has not declined, the proportion of lower-class youths within the street population has slightly increased from what we observed in the summer of 1972. Although drug use varies, the drug of choice often follows ethnic lines: blacks and Puerto Ricans are frequently exposed to heroin; the lower-class whites prefer alcohol and barbiturates, and the middle-class whites select marijuana, "downers," and much less frequently, speed or LSD.²

In the summer of 1972, we found two age groups integrated into the street scene: "runaways," more than 75 percent of whom were between thirteen and sixteen years old, and older "street people," who were in their late teens and early twenties and who may have spent several years on Boston area streets. We found very misleading the prevailing public image of contemporary street kids as alienated middle-class adolescents. Many street kids are children of poverty, violence and broken homes. While the flower children of 1970 and earlier were into



Place Runaway House

speed, acid and grass and celebrated camaraderie, there has been an evolution toward a new type of street person. The new breed adopts the street "rip-off" philosophy of each kid versus the world. The flower-child atmosphere of mutual support and sharing no longer prevails. Today, street kids sometimes carry weapons, steal even from peers, and harbor negative attitudes toward the police. Prostitution, both male and female, is increasing. There are, as apparently there have been for many years, significant numbers of street kids of working-class background.

Quantitative Shift

There is a quantitative as well as a qualitative shift in the Boston-area street youth population. The "summer travellers," children of middle-class homes who knew that they could return to their families and schools once summer vacation was over, have vastly decreased in numbers. Certainly, this accounts for the bulk of the decline in the street population since the peak in 1970. Street kids now are less interested in continental travel. A recently published study which found that less than 15 percent of the kids are from out-of-state supports our impression that most runaways in the Boston area are from Massachusetts.³ A majority of runaways are female, and their legal rights are in special jeopardy due to various state and local government practices which discriminate against female runaways.⁴

There are several theories to explain these observed changes in the street population. Perhaps word has spread that the Boston area is no longer a very hospitable place, that the street atmosphere is far from congenial. In neither 1972 nor 1973 were there summer-long hostel accommodations, and it

became increasingly difficult to scrounge free food. Since 1971, there have been fewer cheap or free cultural events to attract young people to the city. One street worker suggested that the increasing use of "downers" may have lulled many would-be runaways into staying in their own communities. Another street worker felt that, although running away is sometimes a healthy reaction to "impossible" home situations, kids' attitudes may be generally "more realistic" (cynical?) now; i.e., if you cannot find peace and harmony where you are, you probably won't find it far away, either.

Through interviews and perusals of street agency statistics, we discovered that, contrary to public opinion, there are fewer runaways in the summer than in the winter. Perhaps more kids run away during the winter because they then have the double hassles of family plus school; or do runaways more readily find places to sleep in the summer, and therefore have less need to apply to agencies for help? But, runaways do not use street agencies only to find crash pads; they come for food, for medical care, and because of personal or family problems which are apt to be as persistent in the summer as in the winter. Counselors and street workers with whom we talked felt that they eventually see nearly every street kid sooner or later, even if he/she only contacts the agency for information.

Reviewing more than forty years of literature on runaways, Shellow's (1967) monograph suggests that the "runaway" youth cannot be precisely categorized into one type:

"One position asserts that running away is evidence of individual psychopathology, that runaways show serious personal disturbance

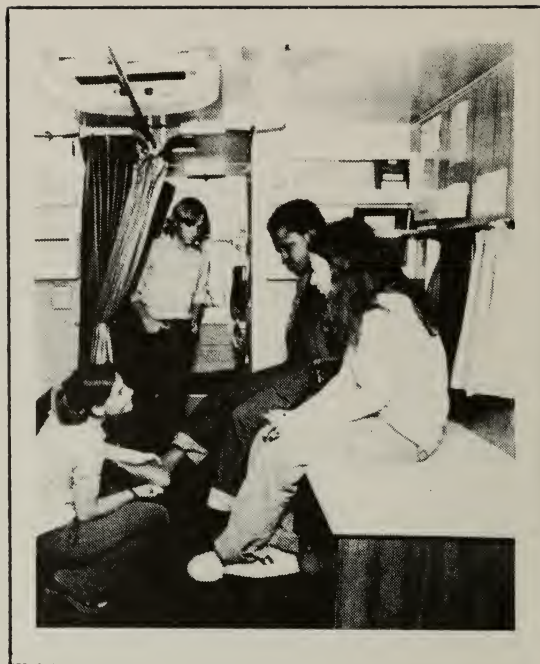
manifested in impulsive, disorganized, and delinquent behavior. The other position, though not excluding the possibility of pathologically driven behavior, contends that most running away is best interpreted as an adaptive response to situation pressures. . .⁵

Our own impression from our summer of 1972 research is that there are indeed two such analytically separable types of runaways, and that the seriously disturbed ones urgently need but are not yet provided with intensive psychological care. We feel that these significant differences among runaways, as well as the evolution of the Boston-area street population into one whose native street species is now composed largely of tough kids from poor homes, and whose previously more nomadic breed is now lingering in the suburbs, have immediate implications for the agencies which deal with these young people.

Survival Resources

Although some facets of the street scene in Boston keep changing, there are certain constants. Kids' needs for direction, to find fulfillment, to love and be loved, are the same today as for the flower children of several years ago, or indeed, for people anywhere and anytime. The unique social, medical and/or psychological problems of the individual street kid are invariably complicated by the special hazards of street life: scarcities of food and shelter; "social diseases" such as unwanted pregnancy, venereal disease and drug use.

The net effect of this array of life problems depends upon the survival resources available to runaways and street people. The resources most heavily used by street youths in the Boston area



Bridge Over Troubled Waters Van

include: 1) Free clinics: Peoples' Free Medical Van, Bridge Over Troubled Waters Free Dental Clinic, Cambridgeport Medical Clinic, Walnut Street Free Medical Service, Fenway Health Center, Mt. Auburn Evening Clinic; 2) Drug programs (sampled in our original study but not discussed in this report); and 3) Special agencies oriented toward crisis intervention, providing food and shelter, counseling and referral: "storefront" problem centers and various telephone "hotlines," Project Place Runaway House, streetworkers.^{6, 7, 1}

Free Clinics in America

As experiments in new ways of delivering

human services, America's free clinics play important roles in delivering not only medical care, but also offer health education, extensive counseling and referral services. Free clinics first arose as innovative services in the 1967 "Summer of Love" days of San Francisco's Haight-Ashbury, when white youths found that their health care and other needs were not being met by existing agencies and institutions.^{8, 9, 10} MIT psychiatrist Joseph Brenner, founder in 1968 of the Cambridgeport Medical Clinic, explained that the *raison d'être* of the original free clinics was to provide an alternative to the less than adequate medical care, which increasingly disenchanted and alienated the youths seeking help at metropolitan medical centers. The medical establishment was delivering "the barest minimum of treatment consistent with legal requirements, while at the same time conveying the message quite clearly that hippies were disapproved of."

Since 1967, the free clinic "movement" has expanded to include more than 150 clinics nationwide.^{12, 13} As one might expect, there are many variations on the theme. For example, although many clinics call themselves "community center open to all," most clinics are consciously designed for and directed toward a particular group or subculture, e.g. street youths, blacks or women.^{10, 14, 15} Such groups as the elderly are conspicuously absent from the patient populations. Most, and sometimes all, clinic staff are volunteers; many of these volunteers are not health professionals, but the proportion varies among clinics. Free clinics tend to be run by their staffs, and seldom is there formal consumer involvement in decision-making. This is quite unlike the Neighborhood Health Center model, in which a central premise is "that consumers and providers together must develop and retain

responsibility and leadership in the design, administration and delivery of health services."¹⁶ Services provided by different free clinics range all the way from a minimum of first aid, screening and referral, to multi-service centers which include not only specialty medical clinics, but also such allied services as crisis and referral "hotlines," legal and life problem counseling centers, outreach health education, and, rarely, dental care.



Bridge Over Troubled Waters Dental Clinic

There are certain similarities among free clinics. Seldom more than a half-dozen rooms in size, the clinics are always located in close geographical proximity to the people they serve to facilitate easy access. All clinics feel strongly that patients should be treated as people with problems, rather than as disease entities. Considerable effort is made to provide an inviting environment which will accommodate the values and life styles of the clinic's clientele, to ensure an atmosphere which is "unhassled," nonthreatening and nonjudgmental. Unfortunately, waiting times in some free clinics can be as long as in traditional outpatient departments.

A Human Right

The people who came together to run the first free clinics were individuals who looked upon health as a human right, rather than as a privilege accorded those who could pay for it. Free clinics continue to be concerned that "the cost of care and eligibility ritual for services should not become a prior means of selection and elimination of many people in real need of help."¹⁰ Unlike those health institutions where "eligibility" for free care is established on the basis of being unable to pay, care is free to everyone at the free clinics.¹⁷

Of course, providing this free care costs money. Two to five years ago, when the youth and counter culture movements were more glamorous, various groups donated seed money and physicians volunteered in droves. Now, funding from donations and other sources is scarce and irregular; and although some health professionals, notably nurses and social workers, still generously donate their services, volunteer M.D.'s are increasingly difficult to come by. Overhead costs remain low because of donated labor and lab services, as well as drugs; but other costs and the dearth of physician volunteers have constrained free clinics from expanding.

Many free clinics share the conviction that the health care system should break out of professional straightjackets, and should advocate lay and professional people's sharing more responsibilities in an atmosphere that is democratic, nonbureaucratic, nonsexist and "deprofessionalized." This is not to imply that free clinics downgrade the value of professional competence. They do, however, emphasize the transfer and sharing of knowledge and skills--sometimes to the extent of having formal

periodic task rotations for non-M.D. staff; and they strive to change sex-role and race stereotypes by placing women and minorities in key staff positions.

Goal Unrealized

The free clinic movement has not realized the goal of some of its adherents: a radical restructuring of the American health care system; but it has made certain groups of patients more visible although not necessarily more acceptable to institutions. One such patient is the adolescent woman with a need for birth control and gynecological services, a need the medical establishment is largely denying and not respecting. Unfortunately, the free clinics alone cannot handle this immense medical and social problem. Nor can they handle alone those "social medicine" problems of venereal disease, drug use, and other life problems which their patients present.

Accordingly, it is not surprising that, while attempting to fill some of the many gaps in our health care system, all free clinics have felt a need to pressure directly "the establishment" for change. But, most clinics are too busy simply providing health services to act as political agents of change. It has been reported by some observers that "free clinics admitted they were not hassled by the establishment because they were doing the system's job"¹² in certain areas. Along this line, some clinics have questioned whether their existence in effect slows institutional response to some of the problems of social medicine mentioned above. In only a very few instances have agencies or politicians seriously threatened the existence of individual clinics.¹⁴

A radically important concept adopted by a small number of free clinics has been that of "patient advocacy," an offshoot of the philosophy that receivers of health care should be encouraged to become actively involved in their own health care and in decisions regarding the kinds of services which they need. The clinic-jargon term "demystification" encompasses much of the role usually designated for clinic staff who work as patient advocates. These paraprofessional advocates are seen as acting to counter what many see as the myths that "the good patient is a passive patient," and that health care providers are omniscient and omnipotent authorities. The roles of the patient advocate, which may vary from one clinic to another, usually include: 1) informing patients of their legal rights; 2) when necessary, interpreting patients' needs to the clinic staff; 3) ensuring that the patient understands the staff's recommendations; and 4) assisting in follow-up management and in any necessary referrals for health services that the free clinic cannot itself provide. Most free clinics, not having patient advocates, do not have such follow-up or continuity of care.

Some observers have suggested that free clinics should not be confused as being models for a new American health care system; "they are local, self-help efforts, not in the bureaucratic tradition to be replicated as standardized outlets for community medical services."¹⁷ Nonetheless, many particular innovations--among them, the consciously tolerant atmosphere that accommodates patients' values and life styles, easier access to primary health services, and increased and creative use of paraprofessionals--integrated within the free clinics are well worth considering for our present and future health care systems.

The Bridge Over Troubled Waters

Most free clinics serving Boston area youths fit the general picture presented above. But, one complex of services, that of the Bridge Over Troubled Waters, is ingenious and unique. Bridge emphasizes street-based outreach programs, delivering services where the kids themselves congregate.

Every weekday evening since 1970, the People's Free Medical Van makes scheduled stops at



Project Place Emergency Van

Harvard Square in Cambridge and Kenmore Square in Boston. As a mobile unit, the Van can alter its itinerary as necessary, such as to serve the youthful crowds that attend the summer rock concerts on the Boston Common. Our survey of area free clinics (each of which sees 15 to 30 patients per evening) indicated that Van patients

include a larger percentage--from 50-75 percent--of street kids than one finds at other Boston area free clinics. The Van's well-thumbed file of patient records indicates that many street kids use the Van as their primary health care resource.

The nightly Van staff includes a volunteer physician and two volunteer nurses, from one to three health science students, and a street worker employed by Bridge. At each stop, the streetworker circulates among youths in the vicinity, making the Van's presence known and often locating kids in need of health or social services. On the Van, history taking and waiting times provide excellent opportunities for the staff to discuss problems with kids, to make referrals--posted in plain view on the inside walls of the Van is an extensive indexed list of survival resources--and just to rap.

When it began operating, the Van had an immense problem of referring street kids since the policy of many area health institutions was to report runaways to the police. Starting in February of 1971, but unfortunately no longer fully funded after 1972, the Massachusetts General Hospital Street Youth Program provided valuable referral medical services in an innovative way. The Program provided patient advocates to guide youths referred by streetworkers and the Van through the often complicated health care system of the hospital. If a runaway or street person had no money at all, the Program made funds available to pay for his/her care. Patient advocates made special efforts to determine that services other than purely medical ones could be offered to meet the individual needs of each youth. Finally, since October 1972, Bridge has operated one of the few free dental clinics in the country.

Problems of Free Clinics

As in other parts of the country, Boston's free clinics are in chronic need of volunteer physicians and of funding. Preventive health care, expanded hours and services, and consistent follow-up are impossibilities given these resource shortages. Some free clinics have a policy against publicity because they fear being overwhelmed with patients. This approach seems unreasonable and self-defeating in its assumption that only the neediest people will present themselves at the unadvertised clinics. The Mt. Auburn Clinic, in September 1972, even went so far as to charge a set (nonsliding) fee of \$12, saying that "now, because of the fee, the people who come in are really in need of treatment." Our summer of 1972 research indicated that street kids are often poor, under-educated, and without adequate food and shelter. Policies of low visibility and of set fees seem to us to provoke inequities by discriminating in favor of more educated and resourceful middle-class youths.

Project Place

Since its opening in 1968, Project Place has developed into one of the best-known and sophisticated support systems for street kids.



Project Place

Place's telephone counseling and referral "Switchboard" provides 24-hour service. During 1971, Switchboard received 40,000 calls, most of them from adolescents and young adults. Problems encountered were: 35 percent "life support" counseling (housing, legal aid, jobs); 26 percent general counseling ("rap," family, sex); 15 percent medical aid (direct referral, pregnancy, VD, birth control information); 14 percent drug abuse counseling; and 10 percent "crisis intervention" (runaways, potential suicides, other acute psychiatric and medical problems). Most referrals receive follow-up.

Project Place has obtained grants to train counselors staffing other telephone "hotlines" in Massachusetts, as well as to operate and staff a van that is now fully accredited as an emergency medical service. On call via two-way radio, the Emergency Van provides 24-hour outreach help for "bad trips," drug overdoses, or potential suicides.

Place counselors are volunteers and work-study students who undergo screening, an intensive preliminary training period, and continuing training sessions with legal, psychiatric and



Project Place Switchboard

medical consultants. Project Place's small ongoing research program attempts to assess needs and services, but there is much left unstudied. We feel that area graduate schools and street youth agencies could mutually profit by allowing graduate students to do research and receive training in the street agency setting. Antioch College in Ohio provided Project Place with a \$25,000 grant to run a program by which Antioch psychology students spend their three-month work period at Project Place. In a similar vein, free clinics in Los Angeles have acted to trade education in youth health problems for physician's services.¹⁹ Students at some medical schools have successfully lobbied to have free clinics recognized as legitimate sites for medical education.

Respected and Widely Known

The Place Runaway House, along with Place Switchboard, comprises the largest, oldest and most comprehensive street organization in Boston. It is also one of the most respected and widely-known: kids from Maine to California have heard about the House, which is the only facility of its kind in the Commonwealth of Massachusetts.

The house in Boston's South End provides food, shelter, legal help and counseling 24-hours a day for up to 30 runaways under 18 years of age. A runaway needs what he cannot find on the streets: safety, food, shelter, attention to medical needs, and perhaps most importantly, people to whom he can relate. The 13 full-time paid staff and seven or so part-time volunteers are all in their twenties and sufficiently long-haired and blue-jeaned for runaways to trust them.



Place Runaway House



Place Runaway House

In order to stay at the house for more than 24 hours, a runaway must be under 18, and must call his parents for permission. If the runaway is on probation, or is under the legal guardianship of the Division of Youth Services, these authorities must be notified for permission. Two weeks is considered the maximum desirable time limit for a runaway to remain in temporary residence at Place House. The house is not a crashpad; only people willing to work on their problems may stay. Most runaways are advised to return home, and family counseling groups are arranged to facilitate this move. Place also sets up family counseling with other agencies after a kid leaves Place. If home is undesirable, and only about one-third of the kids return home, Place will attempt to find other living situations: foster homes, half-way houses, group homes or camps. But, the shortage of acceptable foster homes, especially for adolescents, remains acute.

Place staff has been following eagerly the progress of a new Runaway Youth Act (S. 645) through Congress. One section of the bill would authorize ten million dollars in each of fiscal years 1974, 1975 and 1976 to make grants to establish and maintain local institutions dealing with runaways.

Problems of Street Youth Agencies

The alternative service agencies discussed in this paper continue to be heavily used. This is a tribute to the strength of their vision, and to the energy of their staffs. It is also a strong testimony to the failure of state and local agencies and of Boston-area medical centers to accept responsibility for dealing with major problems confronting Massachusetts youth. Unfortunately,

without more substantial funding for staff, services and research, alternative services such as those discussed here cannot begin to deal continuously and in depth with youth problems presently unrecognized by establishment institutions.

More medical and social and psychological services, as well as streetworkers, need to be located in the suburbs and towns in which runaways and street people grow up. Until there are attempts to deal with "root causes" of youth problems in these communities, suggested several streetworkers, metropolitan street youth agencies might be "fighting a losing battle."

Free clinics, hotlines, and various street youth services are symbolic and significant in their social-medical (rather than legal-judicial) approach to youth life problems. Much remains to be done with this nonjudicial approach to youth services. Until quite recently, runaways apprehended by Massachusetts police were either returned home immediately, held in local police stations, or placed (incarcerated) in one of the detention centers of the Department of Youth Services. At present, a child under the jurisdiction of the Youth Service Board may be sentenced to up to two years because of a family problem; and in effect, parents are relieved of responsibility once a child goes to court. A runaway child from a broken home should not have to be labeled delinquent and sent through the courts in order to receive social and psychological services.

Certainly, much more family counseling needs to be openly available and free. Many youth workers and the police feel that current methods of coping with runaway's problems are at best unsuitable and unhealthy. This problem is not limited to Massachusetts; changes are needed in



Counseling Session, Bridge Over Troubled Waters

the laws of many states with respect to the treatment of juveniles, especially concerning such "victimless crimes" as being a runaway or a "stubborn child."^{4,20,21} It is to the immense credit of former Commissioner Jerome Miller that he was able to close strategically all six of the state's reform ("training") schools.²² What is needed now are more alternative living situations--foster homes, half-way houses, shelters like Place Runaway House--for kids who formerly would have gone to the reform schools.

Summary

Boston and its surrounding communities possess a rich array of health care and social services functioning as alternatives to established modes of dealing with human problems. From interviews and volunteer experiences during the summer of 1972, the authors studied the runaway

and "street people" populations, investigated a number of approaches to providing human services to these young people, and evaluated certain gaps in this care system. . . .

Collating information and experience from almost 20 different youth services and agencies, the authors fashioned a collage of impressions about street kids and their survival resources. Experiments in new modes of community health care delivery, such alternative services as free clinics and telephone "hotlines" provide medical care, as well as health education, extensive counseling and referral services.

There exist, however, many unattended needs, the most critical of which we assessed as: 1) needed changes in current laws dealing with the "victimless crimes" of the runaway and "stubborn child"; 2) alternative living situations for kids who cannot go home again, as well as temporary shelter



Street Scene, Boston Common

care in facilities for runaways, or a year-round metropolitan hostel for older street people; 3) birth control and other adolescent gynecological services; 4) special services, such as intensive psychological care for especially disturbed or violent adolescents who currently have no satisfactory place to go; and 5) significantly increased funding for those private voluntary agencies and clinics which provide vital youth services that are the legally mandated, but long-abdicated, responsibilities of various state agencies.

Sociologically speaking, the romantic image of street life has faded since the Golden Age of "flower children" in the summer of 1970. Fewer youths now throng the city streets, and there has been an evolution from summer-time middle class travellers to year-round children of poverty and broken homes. The gentle, gregarious and pot-smoking flower children have been replaced by today's tough "street kids," who abuse alcohol and barbiturates, carry weapons, and steal even from their peers. These changes in the street

population have important implications for agencies dealing with runaways and street youths.

The authors are indebted to Derek Robinson, M.D., Deputy Commissioner, Massachusetts Department of Public Health, who advised this study. Financial support came from the Massachusetts Department of Public Health and from the Tufts University School of Medicine.

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REGULATORY MECHANISMS IN HEALTH CARE DELIVERY NATIONAL DIRECTIONS

Samuel Philip Caper, M.D.

The health care industry is undergoing a rapid change and profound change. The Congress, as well as the State Legislatures, are facing issues in health care and legislative proposals to deal with them in unprecedented numbers. This flurry of legislative activity is important not only because it is redefining the role of the federal government with respect to health care industry, but also because it is a reflection of a changing role of medicine in American society.

I would like to share my perceptions of the meaning of the growing role of the federal government in payment for health services, and of some of the implications of the shift in emphasis within medicine from the physician and his individual patient to medicine's responsibility as a profession to our society as a whole.

Staggering Costs

Throughout the last century medicine became more complex, more expensive, and less easily understood by the layman. The cost of serious illness became staggering. Even expenses for

routine care became a matter of concern to the average person. Now, even individuals with average incomes can no longer afford adequate medical care without insurance protection.

Following the turn of the century, partly because of more sophisticated and complex technologies, the provision of adequate medical care required [the building of] hospitals and other institutions. This trend accelerated sharply following the 1920's, and has continued since that time. It is only in recent years that the trend toward inpatient care has begun to be reversed. Expenses associated with illness increased rapidly as the hospital began to replace the physician's office or the home as the site of medical care. People began to seek protection from heavy, unexpected medical expenses. Health insurance, as a method of protecting individuals and families from the mounting costs of health services, began to play an important role in payment for those services.

This paper was presented at the Annual Delegates' Meeting of the Massachusetts Health Council, Inc., Tuesday, April 9, 1974. Dr. Caper is Staff Member, Subcommittee on Health, United States Senate.

During the 1940's and 50's hospitalization insurance proliferated rapidly. At the present time, over 92 percent of hospital costs are paid through private or public health insurance programs. In 1940, only 9.3 percent of the population had some kind of hospitalization coverage. By 1950, that figure was 50.7 percent and reached 87.5 percent by 1971.

A Specific Service

The evolution of health insurance has changed the way physicians think about medical services. One hundred years ago, a patient could enter into a private agreement with his doctor to perform a specific service. The physician would provide those services which, in his judgment, were necessary for the care and cure of the patient, and for which the patient was able to pay. If patients could not pay, doctors cared for them free, as a charity venture, or not at all. In any event, the transaction was private, and neither the physician nor the patient had a formal, binding responsibility toward each other.

As risk for the payment of health services through insurance became spread over larger and larger groups of people, the issue of cost became much less important to the individual at the time the service was provided. Health insurance has reduced the importance of payment as a marketplace entry barrier. The physician became free to provide care to his individual patient with little or no concern about its expense at the time.

Medical Technology

The spread of health insurance has been, in my opinion, at least as responsible for the rapid spread of medical technology and the movement of health care services from noninstitutional to institutional settings as was the development of that technology itself. To complete the cycle, rising medical costs have made the continuing growth of insurance a necessity.

As early as 1932, with the publication of the report of the Committee on the Cost of Medical Care, professionals in the health field have

perceived the need for government intervention in the financing of personal health services for selected populations. But that perception, until recently, has not been shared by the public. The federal government's role in the financing of health services remained an insignificant one until the passage of the Medicare/Medicaid Laws in 1965, after over 30 years of debate and increasingly bitter opposition from organized medicine. For the first time, the federal government assumed responsibility for payment for health care services on behalf of a significant segment of our population, the elderly, and with the assistance of the states, the poor.

Although private health insurance did spread at a rapid rate, particularly during the 1950's, when the number of people with some type of hospitalization coverage almost tripled, it failed to protect those in the population most in need of protection--the elderly, the poor and the so-called "high-risk" groups--those persons most likely to require extensive or expensive health care services.

Private health insurance continued to be the privilege of those who could afford to buy it, largely through employment-related arrangement. As the medical care given some segments of society continued to become more sophisticated, more complex and more impressive, the gap between the "haves" and the "have nots" became increasingly more obvious. Largely because of that gap, pressure for universal entitlement to health care increased.

Health Care A Right

Public pressure for expansion of federally sponsored health benefits has continued until now. With very few exceptions, most Americans believe

that health care should be a right, a legal entitlement, assured by the federal government. Their representatives in Congress reflect that view.

Health care as a right of every American means universal participation in a program of financing health care services. As long as our ethical and moral values proscribe neglect of the sick, and as long as every person living in the United States is a potential user of health care services, I believe that any federally sponsored health insurance program must be mandatory, and must be universal. Voluntary programs will inevitably lead to the assumption of a greater than fair share of the burden by those choosing to participate. Care for those requiring services will continue to be provided whether or not they are participants in a health insurance program.

The notion of universal entitlement to health care inevitably generates questions about control of costs and equitable allocation of resources within the health care industry. Questions concerning the minimum acceptable level of medical care, the physical distribution of goods and services within communities and throughout the country as a whole and perhaps most important, the cost effectiveness of medical procedures have become matters affecting not just physicians and other providers of health care services, but all the people. They are now matters of public policy.

Attempts to solve the problems arising from those concerns will lead to profound and permanent reforms in the practice of medicine. Once significant levels of federal funding for personal health services became law, an equally

significant public interest in accessibility and quality of those services was established.

Universal Entitlement

As a result of the imminence of universal entitlement to payment for medical services, it has become absolutely necessary to find much more effective and efficient ways to deliver those services in order to fulfill the promise of an adequate level of medical care for all.

I believe our existing system of providing those services has great strengths. But, I also believe a great deal will need to be added in order to assure all Americans appropriate access to health services, and to assure that public expenditures for health care actually achieve the long-range goal of a better general level of health for all the people. We must decide whether our health dollars are best spent on artificial hearts or on lead-based paint programs. The dollars to do both for all who require services are not there, nor are they likely to be in the near future.

Although assuring payments, the Medicare and Medicaid legislation contained explicit prohibitions against federal intervention into the nature of medical practice, or into the physician-patient relationship. Such a prohibition, inserted into the law at the instigation of the American Medical Association, was ill advised and has contributed to some of the problems so clear today. That the debate over the costs of health care services, their distribution and availability continues almost 10 years after the enactment of Medicare and Medicaid is persuasive evidence that enactment of those measures did not go nearly far enough in dealing with the problems.

Not Uniform Quality

Evidence has accumulated over the past 30 years that some Americans receive much more medical care than others, and that the quality of health services throughout the country is not uniform. A very large number of proposals to extend the financing and improve the distribution and quality of health care services lie before the federal Congress alone. Many more are being debated in state legislatures across the country. They are all attempts to contribute to the goal of uniformity and equity within an anticipated system of universal entitlement to health care services.

Proposals to strengthen our planning capabilities in the health field and to effectively implement those plans are currently pending before the House and Senate Health Subcommittees. An important component of those proposals is the increased importance of consumers in making decisions about how, when and where health services and facilities will be located and delivered. The objective of these proposals is to create a publicly accountable structure to identify needs for health care services within the communities and to develop a plan for fulfilling those needs.

HMO Act

Other attempts are being made to rationalize the delivery of health services within communities and to more closely align the incentives of health care providers with those of consumers. The Health Maintenance Organization Act of 1973 is an attempt to encourage a greater degree of organization within the health care system, to increase consumer choice, and to provide a greater

stake by providers in controlling health care expenditures.

A third, even more important area of legislative activity, is that of the quality of health care services. The Congress wishes to assure that medical care financed through public programs is appropriate and effective, has the desired long-term impact on the health of the people being served, and is worth the price.

The effectiveness of health care procedures in effecting medical cure will come under increasingly close scrutiny. Growing attention will be paid to the appropriate role of the physician himself in the medical care component of his activities.

PSROs

The single most important current federal activity in the area of quality assessment is the professional standards review organizations [PSRO] amendment to the Social Security Act, which requires that health care services provided under Medicare and Medicaid be subject to review by committees of local physicians. Local PSRO units will be required to certify the appropriateness and quality of institutional services as a condition of payment. Both the Mills/Kennedy and the latest administration health insurance proposals would extend and strengthen PSRO review activities.

The most significant implication of the PSRO Law is the requirement for the development of quality standards for health care services, first at the community level and later on a broader basis.

Formal, generally agreed upon standards for health care services have never before existed.

The response of some individual physicians and of organized medicine to the PSRO Law has been largely negative. They fear "government intrusion" into the practice of medicine and disruption of the physician-patient relationship. These are the same stale cries of anguish that are heard each time attempts are made to modify the existing situation so that people get the health care they need. They were heard prior to the enactment of Medicare and Medicaid, regional medical programs, comprehensive health planning, HMOs and now PSROs.

Ostrich-Like Position

Organized medicine has somehow succeeded in maintaining the same ostrich-like position throughout the debate leading up to the present time. Their response to PSROs reflects their posture. The PSRO Law contains the strictest and most explicit protections of the confidentiality between physicians and patients of any law on the books. There is far less danger to the confidentiality of the physician-patient relationship under the PSRO Law than under current practices of private health insurance companies in screening applicants for insurance to "protect" themselves against high risk subscribers. Yet, organized medicine does not seem concerned with those practices. Their fears and concerns must be focussed on something other than the welfare of their patients.

I believe the concerns of physicians about PSROs are unwarranted. Even though organized medicine has opposed each of the successfully

enacted laws affecting the financing or delivery of health services, doctors have continued to fare quite well, and will continue to do so. The PSRO Law does not require the development of rigid health care standards, but rather that a consensus be developed, using generally agreed upon criteria, to judge the quality and effectiveness of health care services. I do not think that is asking too much of a profession that prides itself on its scientific approach to solving problems.

Unbridled Expansion

The PSRO law is one of the greatest challenges and one of the greatest opportunities the medical profession has faced. As medical care costs become more visible and more a public responsibility, constraints will be applied to the unbridled expansion of services. As entitlement to health care services becomes a reality, closer scrutiny will be given to the effectiveness of those services, and questions will be asked concerning what those public dollars are buying.

Health care practices will be examined with respect to the impact of highly sophisticated and expensive techniques upon the health of the population as a whole, and to the efficacy of less expensive but relatively frequent practices. Already, in several centers throughout the country, the cost effectiveness of procedures such as coronary artery bypass, and cardiac intensive care units is being examined.

Pressures to control expenditures in a publicly financed program will mount, and action will be taken to control these expenditures. The recent regulations under the Economic Stabilization Act demonstrate that.

Patients' Interests

The medical profession has an obligation to assure that those decisions are made in the best interest of their patients. It is the responsibility of the health professions to see that cost controls are applied wisely and do not result in a decrease in the quality of medical services. Blind, flaying, ignorant opposition to proposed solutions to the problems of universal entitlement will, I am afraid, result in oppressive and arbitrary attempts to control costs. It is time for organized medicine to recognize the problems for what they are, and to contribute in a constructive way to their solution.

Uncertainty and Conflict

We are living through a period of dramatic and exciting change in the American health care industry. Change always produces uncertainty and conflict. In my view, the changes I have described today are good and are inevitable. It is important that those who make their living [by] providing health care services join with the recipients of those services in arriving at solutions which will be in the best interest of our country as a whole. I hope as this conference proceeds, the debate is carried forward in that spirit. There has been too much anger, too much misinformation, and too much unnecessary fear. I hope the results of conferences such as this will contribute in a constructive way to the solution of some of the problems I have outlined today.



Massachusetts Department of Public Health
Office of Health Education
600 Washington Street
Boston, Massachusetts 02111

Publication of this document approved by
Alfred C. Holland,
State Purchasing Agent. No. 15.

The Department complies with the
Civil Rights Act, Title VI, 1964.

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COMMONHEALTH



Massachusetts department of public health

volume 3 number 4 fall 1974



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COMMONHEALTH

Fall 1974 Vol. 3, No. 4 (Series II)

Quarterly publication (Winter, Spring,
Summer, Fall issues) of the
Massachusetts Department of
Public Health
600 Washington Street
Boston, Massachusetts 02111

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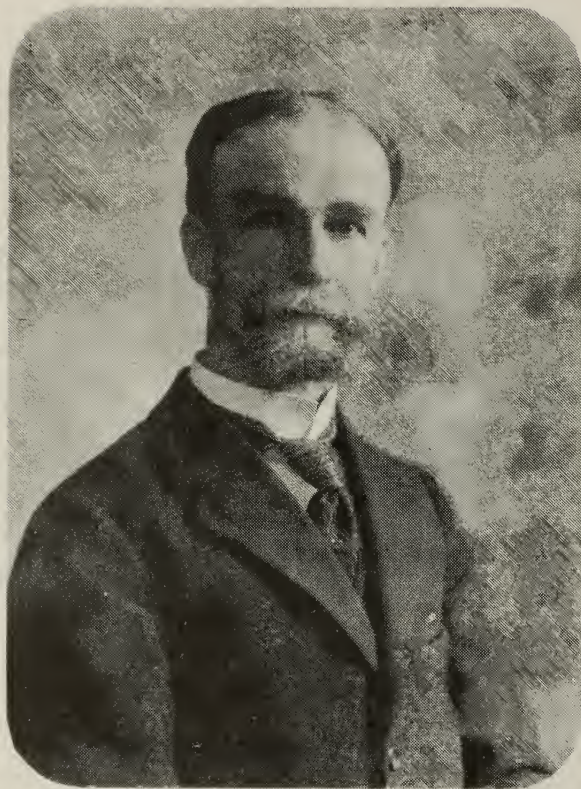
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The State Laboratory Institute

... Pearl K. Russo

To the men and women of the State Laboratory Institute, who work quietly, efficiently, without fanfare or publicity, to protect the health of the people of the Commonwealth, this issue of COMMONHEALTH is sincerely dedicated.

THEOBOLD SMITH, M.D.



First Director, Antitoxin and Vaccine Laboratory

1895 – 1914

**In whose honor the State Laboratory Institute will
be named the Theobald Smith Health Services
Laboratory.**

A DEDICATION, AN ANNIVERSARY

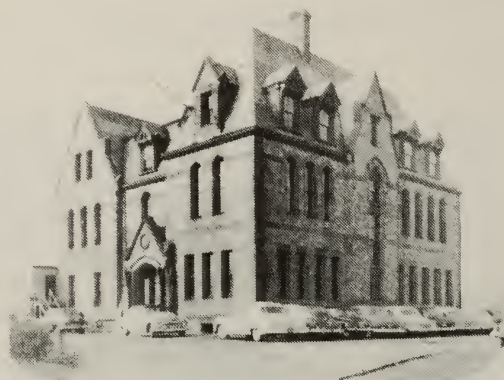
The year was 1894. The "worker of miracles," Louis Pasteur, was nearing the close of his illustrious career (1822-1895). Scientists trained in the recently built Pasteur Institute were pursuing their research in distant parts of the world. One of them, Alexandre Yersin, was in Hong Kong, where he isolated the plague bacillus. Paul Ehrlich and Emil von Behring, the German bacteriologists who were born within a day of each other, were observing their 40th birthdays. Their studies and those of other researchers in microbiology indicated that various infective agents were responsible for the spread of certain diseases. This knowledge provided the basis for rational methods of prevention and treatment, including vaccination.

The year was 1894. The Massachusetts Board of Health, working from the premise that public health is a proper responsibility of the state, began the production of diphtheria antitoxin in its newly established Antitoxin and Vaccine Laboratory in Forest Hills. This was the nucleus of a laboratory group that was to develop into the Division of Biologic Laboratories. The Diagnostic Laboratory

was born at the same time, when the Board recognized the importance of having a trained bacteriologist to head the Antitoxin and Vaccine Laboratory and to enlarge the state's infant program for the bacteriologic diagnosis of infectious disease.

Eighty years later, on October 11, 1974, the Department of Public Health held dedication ceremonies for the first new building of the State Laboratory Institute, formed in 1952 by the union of what had now become the Division of Diagnostic Laboratories with the Division of Biologic Laboratories. (A chronology of the two Divisions appears at the end of this issue.) For the first time in the history of the Division of Diagnostic Laboratories, all its units are now housed under one roof. A second-floor covered walkover connects the new building with the laboratories and offices of the Division of Biologic Laboratories.

The move from former quarters in the Bussey Building to the new State Laboratory Institute Building was a leap from the 19th century into the last quarter of the 20th century.



THE BUSSEY BUILDING

For more than 100 years, it had been a landmark familiar to travelers on the Jamaica way. Constructed in 1870 in the fashionable Victorian Gothic style of that period, the Bussey Building dominated the landscape overlooking the Arnold Arboretum. But, few passersby knew what took place in the massive stone structure, with its solid buttresses, stone lintels and heavy slate roof.

The building was the gift of Benjamin Bussey, a native of Canton, Massachusetts, described alternately as a pirate, a silversmith of note, a rich gentleman farmer, an amateur geneticist, one of the most distinguished philanthropists of his time (1757-1842), a shrewd and colorful benefactor of Harvard College. In his will, Benjamin Bussey provided for both the land and an endowment for a school of agriculture and horticulture. The remainder of his estate was earmarked for the support of the Law and Divinity Schools of the college.

In honor of its benefactor, Harvard named the new campus, built on the site of the Bussey farm in Forest Hills, the Bussey Institution, which opened its doors in 1871. Here were housed classrooms and laboratories for professorships in farming, applied zoology, agricultural chemistry, horticulture, botany and entomology.

The relationship of the Department of Public Health to the Bussey Institution began in 1894, the year when the Massachusetts Board of Health, as the Department was then called, began the production of diphtheria antitoxin. Production was carried out at the stables of the Bussey Institution, and the serum processed at the laboratory of the Board at the State House. Recognizing the need for a trained bacteriologist, the Board obtained the services of Theobald Smith, M.D., a researcher and gifted teacher, later to be acknowledged the greatest American bacteriologist. Dr. Smith outfitted his laboratories

in the Bussey Institution and started a larger production of antitoxin. At the same time, diagnostic services were begun with the examination of cultures for diphtheria. In a short time, the bacteriologic diagnosis of infectious diseases included examination for tubercle bacilli and for malaria.

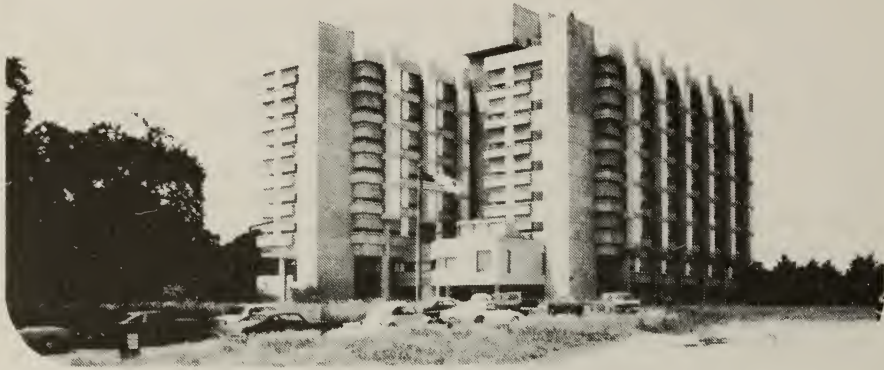
When the General Court of 1903 authorized the State Board of Health to produce and distribute antitoxin and "vaccine lymph" (smallpox vaccine), the two functions of the laboratory — production and diagnosis — separated. A new Antitoxin and Vaccine Laboratory was constructed on land adjacent to the Bussey Institution and occupied in July 1904. The Diagnostic Laboratory had earlier moved to the State House, where it remained for 50 years.

The Institution was closed in 1936, when the Bussey staff was transferred to the Harvard Biological Laboratories in Cambridge. During World War II, the Medical Corps of the United States Army renovated the Bussey Building and occupied it until 1946. The following year, the Massachusetts Department of Public Health became the major occupant of the building when the Diagnostic Laboratory moved back to its birthplace, but in larger, better furnished quarters. Here it was joined by the Wassermann Laboratory, which had been added to the Department's laboratory services in 1915 and located at the Harvard Medical School, where William A. Hinton, M.D., had initiated his pioneering work in syphilis serology.

The two decades following the close of World War II saw a tremendous expansion of the

activities and programs of the Diagnostic Laboratories. It became obvious that the venerable Bussey Building, despite its memorable history, could no longer serve the requirements of a modern laboratory program. In 1963, the Commonwealth of Massachusetts purchased the Bussey grounds and the laboratory buildings from Harvard University. Ground breaking ceremonies for the new headquarters of the State Laboratory Institute took place in December 1969 on land adjacent to the old building. As the modern structure began to rise above the Jamaicaway, the Department began a sustained effort to preserve the Bussey Building. Overtures to historical societies, schools and universities brought no responses. State funds to carry out a formal architectural and engineering survey to determine the exact physical status and estimated cost for refurbishing the historic building were not available. After several years of fruitless meetings, correspondence and communication, the Department was forced to face the inevitable. The Bussey Building was doomed. As soon as the State Laboratory Institute moved into the new building, the wrecker's ball began its destructive work.

What remains of the Bussey Building — the huge stone emblem that rested above the old entrance — now reposes prominently in the lobby of the new building. Engraved on the stone is the interim motto of Harvard College, *Christo et Ecclesiae, Veritas*, a silent reminder of the past. As enduring as the stone, however, are memories of giants who worked diligently, modestly to eradicate disease, to save lives, and to add to the store of human knowledge.



THE STATE LABORATORY INSTITUTE BUILDING

One motorist named it "The Fortress"; another, "The Battleship," as the new State Laboratory Institute Building was taking form on the high ground overlooking the Arboretum. The use of reinforced concrete for the entire exterior of this impressive building, designed in the current style of "brute modern" architecture, accented the solidity. Both individuals called it a marvel, a beautiful laboratory, when they had an opportunity to visit the completed structure.

Built to provide a complete testing, research and teaching center, this highly specialized building was designed in collaboration with the medical and professional staff of the Institute. After having considered several designs, the architects decided on a high rise building of eight floors, with the actual laboratory units housed on floors three through eight. Two wings on each of these floors are connected by a circulation node that contains the stairways and elevators.

The basic design of the working laboratories is a walk-in module, 12 feet by 20 feet, which can be repeated in several multiples to provide suitable areas for the proper functioning of the Institute. The modular concept was worked out in close cooperation with the Center for Disease Control in Atlanta, Georgia. Their experience in the design of many laboratories throughout the country found the module to be the most efficient use of laboratory space.

An Unusual Feature

An unusual feature of the building is the vertical chases, exterior rises that were incorporated into the architectural and engineering designs. These vertical chases, which start at the third floor, carry all the utilities for the laboratories, all the duct work and piping. They not only save space by keeping the interior pipe

and duct work to a minimum, they also act as germicidal exhausts to remove air from laboratory areas.

An elaborate system of air intake and output, essential for a laboratory that works with potentially harmful viruses and bacteria, provides 12 changes of air an hour. This "one-pass system" begins with high-pressure fans and dual filters in the penthouse, which are connected to exhaust fans on the roofs of the building. The penthouse also houses a still for distilled water, which is piped down to the central glassware washing area on the second floor.

A trip through the power plant, which connects with the main section of the building on the basement level, is as exciting as the climb to the penthouse. The power plant encompasses six mechanical rooms in the basement and on the first two floors, and contains some of the newest and most sophisticated equipment available to guarantee uninterrupted operation of the laboratories around the clock. Every piece of mechanical equipment or apparatus is on a 100 percent standby system. Equally impressive is the self-sufficient electric generating system that goes into operation as soon as power from the Edison Company starts to fail. A blinking of lights in the building sets the independent system into motion. The lapse in time for the switchover is less than five seconds.

The first floor houses the central clerical offices, where all records are kept. These will be used in a data processing system to facilitate compilation of statistics and to permit rapid retrieval of routine information. Here, too, are conference rooms, an attractive staff library, and a large, bright cafeteria.



Beyond the main lobby is a smaller entry opening onto a self-contained unit. An auditorium, which seats 200 people, is used for classes, lectures and special programs. Removable seats can accommodate groups of varying numbers. Adjacent to the balconied auditorium are conference rooms and an area for a closed circuit television system for laboratory educational programs. If needed, the system can be linked to the Department's hospitals.

The second floor houses additional offices, Central Services, and the mechanical fill-rooms of the Division of Biologic Laboratories. Serums and vaccines manufactured at the Biologic Laboratories' main building are filled, sealed, labeled and dated automatically in a completely sterile atmosphere. Ultra violet lights above the filling machine and moving belt, as well as high density filters, clean the air to approximately 99.6 percent purity. The room is maintained at positive pressure to keep out air and bacteria. This impressive belt system can handle 160 pieces a minute, requiring the services of only six to eight people.



Central Services

Central Services supply the entire building with the services required by each laboratory. Glassware funneled from all the labs into the central glassware washing area is washed in demineralized water in two high-volume washers, then given a final rinse in distilled water. Automatic test tube and pipette pluggers help to simplify the work of laboratory personnel. Row upon row of shelves hold the chemically clean glassware that is tabulated daily to guarantee a continuous supply.



Another area is devoted to media preparation. These laboratories hold the most up-to-date equipment — an automatic pipetter, a water bath to maintain media at proper temperatures, a unit containing distilled water maintained at a high degree of purity and tested for its pH content every morning. Media and cultures are kept in a walk-in refrigerator and freezer and a walk-in incubator in the corridor. Similar units are installed in both wings of the building on every floor that houses a laboratory program.

Specialized Equipment

Each laboratory is controlled by either negative or positive pressure by a process that works through the air conditioning system. In laboratories where technicians work with contaminated materials, the pressure is negative to prevent the transfer of organisms outside the room. Laminar flow benches and biological safety cabinets are also interlocked with the roof exhaust fans. This system brings in a cushion of clean air across the working surfaces to maintain a completely sterile atmosphere. The new building contains close to \$1,000,000 worth of the most advanced, sophisticated and specialized equipment — automated scanners, computers, electron microscopes — needed to keep abreast of the increased scope of laboratory testing.

But, it is what takes place in this magnificent new building that is most exciting. The structure itself is merely the instrument for improving the quality of services to physicians and health agencies in Massachusetts. The aim of the State Laboratory Institute, simply stated, is the protection of the health and safety of the people of the Commonwealth.

THOSE SACRED PLACES – LABORATORIES

Division of Diagnostic Laboratories

The many services of the Division of Diagnostic Laboratories occupy floors three through seven in the new State Laboratory Institute Building. Here, bacteriologists, virologists, chemists and technicians carry out bacteriological, serological, virological and mycological tests that are essential to the proper diagnosis of infectious diseases. These laboratories act as a back-up to other programs of the Department of Public Health. A voluntary laboratory improvement program, a metabolic disorders screening program, and a childhood lead poisoning prevention program are the other components of the Diagnostic Laboratories. The Division accepts specimens for

testing, without fee, from physicians, dentists, hospitals, other laboratories and health agencies within the Commonwealth.

Serology Laboratory

Previously known as the Wassermann Laboratory, this important section of the State Laboratory Institute has been renamed the Hinton Memorial Laboratory in honor of William A. Hinton, M.D. Dr. Hinton initiated the pioneer work in syphilis serology and served as the first and only director of the Wassermann Laboratory from 1915 until his retirement in 1953.



The nucleus of the Serology Laboratory is the large "routine lab," which receives an average of 1,200 blood specimens a day from physicians, clinics and hospitals for premarital, prenatal and diagnostic tests for syphilis. In the "routine lab," technicians organize all the work for the other components of the Serology Laboratory, the major serology laboratory in the state. During fiscal 1973-1974, the laboratory performed over 280,000 routine tests for syphilis. Three to four percent of this large number are reactive, that is, the specimens probably contain syphilis antibodies. These reactive specimens are then subjected to a more highly specific syphilis test

available to physicians and laboratories within 36 to 48 hours after the laboratory receives a blood specimen.

Rabies Laboratory

The serology section also includes the Rabies Laboratory, which became a part of the Wassermann Laboratory in 1916. Although there have been no cases of rabies detected in ground animals in the Commonwealth since 1949, states bordering Massachusetts have reported cases of rabies in dogs, cats, farm animals, foxes and



known as the FTA-ABS test. A new automated FTA-ABS processor, a sophisticated and expensive turntable, is able to process specimens at the rate of about 40 per hour. The results of both the screening and specific FTA-ABS tests are usually



skunks. The possibility of rabies in this state cannot, therefore, be dismissed lightly. As a result of the publicity surrounding the discovery of a rabid raccoon in Bristol County in March 1973 (the animal was incubating rabies when brought into the state from New Sharon, Maine), more individuals are now aware of the possible danger not only from wild animals, but from household pets as well. Among the 75 animals the Rabies Laboratory received for testing in one month, July 1974, were dogs, hamsters and a cat.

Delivery of animals for testing of rabies can be made to the laboratory at any time of the day or night. The laboratory requests that only the head of the animal be sent, packed in ice when necessary. Unfortunately, concerned individuals will sometimes bring or send in the whole animal. The Rabies Laboratory works closely with local boards of health to keep them apprized of what is happening in their communities. In addition, the Rabies Laboratory reports its findings daily to the Division of Communicable Diseases and to the

Division of Animal Health in the Department of Agriculture.

A special laboratory that was custom designed for the Tuberculosis Control Program of the Department occupies the remaining wing of the third floor. For many years, the examination of smears and cultures for tubercle bacilli was another active service of the Diagnostic Laboratories. Lack of space in the Bussey Building and the desire to build a strong centralized laboratory led to the temporary transfer of the TB testing to the Mattapan Chronic Disease Hospital of the City of Boston. Now one of the best tuberculosis reference laboratories in the country, it will one day, State Laboratory personnel hope, again become a part of the State Laboratory Institute. Meanwhile, this efficiently designed laboratory, with the most modern incubators, centrifuges, biological safety cabinets, isolation rooms for the organization of specimens and other tasks, as well as dressing rooms for personnel, stands idle.





Bacteriological Laboratory

One of the busiest diagnostic services of the Bacteriological Laboratory is the Throat Culture Program. During the fiscal year that ended on June 30, 1974, the laboratory examined cultures from 142,942 specimens for Group A hemolytic streptococci, the organisms that cause streptococcal sore throat and scarlet fever. The value of this testing program to physicians lies in the rapid determination of the presence of the streptococcal infection. This is often not apparent nor clinically recognizable, but it can usually be identified by the appropriate laboratory tests. The report of positive cultures are telephoned to the physician within 24 hours after receipt in the laboratory. Speed in making a proper diagnosis is essential if patients, usually children between the ages of six and twelve, are to be spared the disastrous sequelae of a "strep throat"—rheumatic fever, heart and kidney diseases.

Screening for enteric pathogens, such as *Salmonella*, which includes the typhoid bacillus, *Shigella* and enteropathogenic *Escherichia coli* (the cause of infant diarrhea), is another important activity of the Bacteriological Laboratory. Each year, about 12,000 specimens are sent to the laboratory for examination. Although most of them are the commonly encountered salmonella and shigella, the laboratory has also identified enteric pathogens that rarely show up in this part of the country. During the year that ended on June 30, 1974, two unusual *Shigella dysenteriae*, type 1, specimens were identified in the laboratory. Both cases had been brought back from Mexico. Quick recognition of this pathogen is an urgent necessity. The acute bacterial dysentery that it causes is very severe and can result in death if proper treatment is delayed. Today, when so many individuals travel to distant parts of the world, laboratory personnel must be on the alert for unusual organisms brought back by travelers.



Food poisoning outbreaks in Massachusetts can usually be traced to salmonella that has been transmitted by contaminated food or unsanitary food handling. A little epidemiological detective work is sometimes required to trace the source of infection. Such an incident occurred on January 7, 1974, when the Bacteriological Laboratory reported two cases of salmonellosis caused by *Salmonella eastbourne*, a rare serotype. The following week, there were two more cases. The laboratory relayed these findings in the children, aged four or under, to the Massachusetts Division of Communicable Diseases, which, in turn, notified the Center for Disease Control in Atlanta. Conducting a telephone case-control survey, the Epidemiological Branch of CDC, suggested that foil-wrapped chocolate balls manufactured by a Canadian company and distributed by a candy corporation in New Jersey might be the vehicle of

infection. Canadian and both state and federal laboratories in the United States isolated *S. eastbourne* from several of the chocolate products, all of which were voluntarily recalled by the manufacturer in February 1974. Further investigation of the manufacturing plant by CDC and a team from the Canada National Health and Welfare revealed the sources of contamination and cross-contamination. The company shut down production in order to eliminate the sources of contamination. The outbreak of salmonellosis hit states as far west as California. Before it subsided, Massachusetts had recorded a total of eight cases.

Another unusual organism was the infecting agent in an earlier episode of food poisoning. In August and September 1972, the laboratory investigated two outbreaks of gastroenteritis in 35 persons, which were associated with cooked lobster meat. Specimens and lobster samples yielded cultures of *Vibrio parahaemolyticus*, a marine organism that abounds in U.S. coastal waters, and which is found in many species of fish, shellfish and crustaceans. This organism, however, dies rapidly in the refrigerator or freezer, or when heated to temperatures of 55° to 60° C. Investigation by the Department's Division of Communicable Diseases showed that the lobster meat had been recontaminated during the shucking process. An educational program directed to the employees of the two lobster firms involved brought results. No further cases of *V. parahaemolyticus* food poisoning were reported.

The steady increase in the number of cases of gonorrhea in Massachusetts, as in the entire country, has added to the work of the gonorrhea culture program of the Bacteriological Laboratory. For fiscal year 1974, the laboratory examined approximately 20,000 specimens, both cultures

and smears. Over 14,000 cultures had been submitted by various clinics throughout the state – venereal disease, family planning, prenatal, obstetrical and gynecological in both public and private hospitals – and by private physicians. The laboratory ordinarily performs two tests on each specimen, but does two extra tests on throat and rectal specimens, which are now coming into the laboratory in greater numbers. Results may be obtained within 24 to 72 hours. The laboratory, however, phones in the positive results.

A special reference laboratory has an important function – the identification of cultures that are difficult to pinpoint. Clinical laboratories and hospitals throughout Massachusetts send in subcultures, many of which are associated with infections acquired during hospitalization, for a definitive diagnosis. Despite the infrequent occurrence of such diseases as anthrax, botulism, cholera, diphtheria and plague, laboratory workers recognize the need for early diagnosis. Anthrax is still endemic in Georgia, Texas, Arizona and the Dakotas, and new areas of infection in animals may develop from eating animal feed that contains contaminated bone meal. Another possible source of anthrax came to light when the anthrax bacillus was recently isolated from a number of goatskin handicrafts produced in Haiti. This investigation resulted from a case of cutaneous anthrax in a woman in Florida who had purchased a Haitian drum. Prompt diagnosis is necessary to begin effective antibiotic treatment, which will prevent serious illness and possible death.

A little known but equally important part of the Bacteriological Laboratory is the Mycology Laboratory. Its task is the tracking down of the elusive yeasts and fungi which cause a variety of mycotic infections in man and animals. The

Mycology Laboratory received only 314 specimens for the year that ended on June 30, 1974, but the work of identifying the many different fungi is painstaking and time consuming. Several tests on a specimen, whether it be hair, finger-nail parings, skin scrapings, spinal fluids, sputum, urine or soil samples, are required before an accurate diagnosis can be made. This is often the case with respiratory illnesses like histoplasmosis or nocardiosis, both of which mimic tuberculosis. Nocardiosis has a high fatality rate if unrecognized and treated with the wrong drugs. Disseminated through the blood stream, *Nocardia asteroides* may produce abscesses of the brain and involve the kidneys, spleen, liver and adrenal glands. If recognized early, however, the infection can respond well to the sulfonamides.

The importance of the Mycology Laboratory is highlighted by the fact that more individuals are falling victim to fungal diseases because their susceptibility to the mycoses has been increased by treatment with immunosuppressive drugs, antibiotics and steroid therapy. Proper laboratory identification of the fungal agent is essential in establishing the clinical diagnosis and to the selection of an effective therapeutic agent in such cases.

The Bacteriological Laboratory provides another important service in addition to its many testing programs. That is the bench training in various test procedures made available to hospital technicians and resident pathologists.

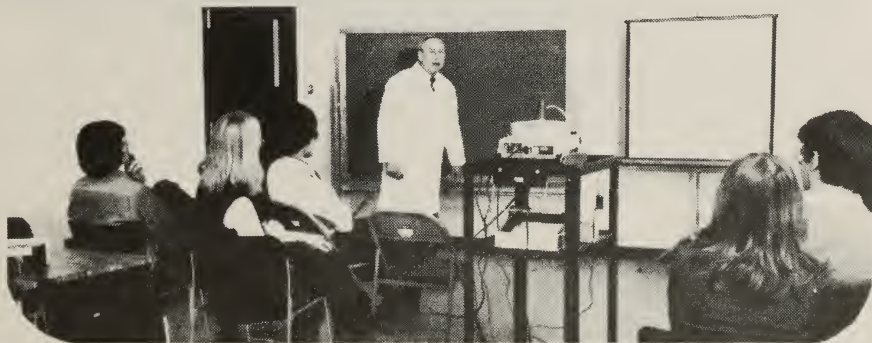
Laboratory Improvement Program

On the floor above the Bacteriological Laboratory are the offices and laboratories of a program of the State Laboratory Institute that

rarely appears in the news. Yet, its work is of vital importance to every individual in the Commonwealth. Modestly called the Laboratory Improvement Program, it has since 1939 been evaluating and approving laboratories on a voluntary basis for specified bacteriological, serological and immunohematological procedures. Originally designated the Laboratory Approval Program, it developed as early as 1931 as part of the state's pneumonia therapy program. The Department found it necessary to teach technicians how to type pneumococci. Typing was then essential in order to select the correct specific pneumoccal antiserum for treatment.

deficiencies; and consultation to solve problems on the spot.

The program has grown steadily since its inception. In 1940, it granted 100 Certificates of Approval; in 1974, it granted Certificates of Approval for specific tests to 381 laboratories. The procedures for participation and certification are the same for all types of tests. A schedule of specimens for the yearly evaluation period is sent to all laboratories. Participating laboratories then receive evaluation specimens of five to ten samples per shipment. Identical samples are sent to reference laboratories that cooperate with the



The basic objective of the Laboratory Improvement Program is to improve the laboratory proficiency of private and hospital laboratories throughout the state. Experience in Massachusetts, as well as nationally, indicated that, in addition to inaccurate tests, there were many unexplained variations in test results among laboratories. The program carries out a threefold approach to achieve its goal of improved performance: proficiency testing to provide laboratories an opportunity for self-evaluation by comparing their results periodically with those of other laboratories; training to correct widespread

program - the Center for Disease Control, other State Departments of Public Health, and Massachusetts laboratories, both private and hospital-based. Laboratories whose results indicate a need for some improvement are notified and often invited to send a member of their staff for direct training.

The entire wing devoted to the Laboratory Improvement Program was designed to facilitate and enlarge training programs. Two small rooms are available for individual instruction in fluorescent microscopy. A training laboratory for



bacteriology can accommodate 18 students, three in each of the six well equipped bays. Four safety cabinets can be used by eight students at a time. A slightly smaller training laboratory for chemistry contains bays for 15 students. Both laboratories are wired for closed-circuit TV.

Workshops held in April, September and October 1974 were oversubscribed and may be repeated at a later date. Thirty individuals from private and hospital laboratories attended a three-day training session in laboratory management; 18 laboratory technologists took part in a three-day workshop in hematology; 30 technologists participated in a four-day workshop on abnormal hemoglobins and thalassemia.

Sharing space with the Laboratory Improvement Program are three associated programs. Medicare designated the Department of Public Health as the state agency responsible for assuring compliance of independent clinical laboratories with federal conditions for coverage of service. Two laboratory inspectors from the

Department's Division of Health Regulations assigned to Medicare inspection work cooperatively with the Laboratory Improvement Program.

The Gonorrhea Control Unit was assigned to the program from the Department's Division of Communicable and Venereal Diseases. The major aim of this aspect of the gonorrhea control program is the massive screening for gonorrhea in females by educating physicians to the importance of obtaining a culture as a routine part of each pelvic examination. Control of gonorrhea is difficult since about 75 to 80 percent of infected females are asymptomatic and are, therefore, carriers. Because symptoms are nonspecific, diagnosis in women is difficult. A culture must, therefore, be done for a definitive diagnosis. An essential element of the Gonorrhea Control Unit is the training of clinic and laboratory personnel, as well as consultation. Under a contract arrangement, clinics and laboratories throughout the state are now sending their cultures to the State Laboratory Institute for testing.



Metabolic Disorders Laboratory

The sixth floor of the State Laboratory Institute Building houses the largest, most comprehensive program in the world for the screening of newborn infants for genetic diseases. This program is a tribute to Robert A. MacCready, M.D., who, as the Director of the Division of Diagnostic Laboratories (now retired), became world famous as its originator and developer. The first legally mandated state program in the country (Acts of 1963), the Metabolic Disorders Screening Program has, since 1962, screened for phenylketonuria (PKU), a congenital faulty metabolism of phenylalanine, one of the amino acids. If left untreated, the increases of phenylalanine and related metabolites in body fluids and tissues can lead to brain damage and mental retardation. As researchers introduced screening tests for other metabolic disorders, the Metabolic Disorders Screening Laboratory added these tests to the program, which now screens for over 30 inborn errors of metabolism. These include galactosemia, cystinuria, maple-syrup-urine disease (MSUD) and some of the rarer amino acid metabolic diseases like argininosuccinic acidemia.

The Metabolic Disorders Screening Laboratory performs multiple tests on three separate filter-paper specimens. Testing for maternal PKU is done on umbilical-cord blood taken at the birth of the infant. Peripheral blood from the infant's heel is obtained at two to four days of age for the second series of tests. The third specimen, urine, is taken at home by the mother or father. Filter

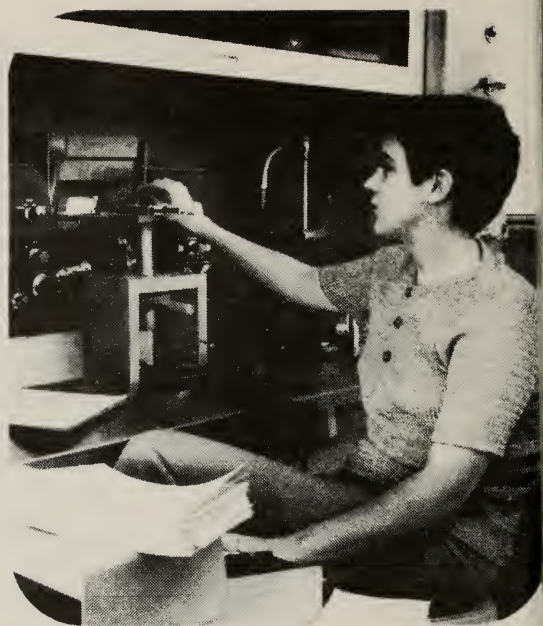


paper is put into the folds of the baby's diaper, then dried and sent to the laboratory. The response of parents to this simple test has been rewarding—75 to 80 percent participation. This is the result, in part, of the educational campaign carried out by the program, mainly through a clearly written pamphlet, "Protecting Your Baby," which is presented to every mother whose baby is delivered in a hospital in the Commonwealth. The pamphlet has been translated into Spanish and Chinese for those mothers who cannot read English.

The primary purpose of the program is the detection of serious genetic diseases, which, if detected early enough, can be treated either by diet or other methods. Some of these disorders, like iminoglycinuria, are clinically benign. Others, including those mentioned above, result in very serious problems: mental retardation, kidney and liver diseases, diseases of the eyes, and serious bone changes. An outgrowth of the program is the accumulation of information that now allows researchers in the Department to separate those chemical abnormalities that do cause disease or disability from those that cause no problems. From the inception of the program in 1962 through 1973, about 140 infants with PKU have been identified by the screening program. With rapid diagnosis and treatment, these children are now normal. This has resulted not only in a tremendous saving to the Commonwealth, which would have borne the costs of institutionalization, but in averting personal tragedy for the families involved.

Lead Poison Prevention Program

The most recent testing program of the Department went into effect in March 1973. The



Childhood Lead Poisoning Prevention Program has two specific aims: to identify children who may be damaged by high blood levels of lead and to prevent future exposure to the hazards of lead by controlling the environment. Unlike metabolic disorders, lead poisoning is a man-made disease that can be controlled but is still widely prevalent. Conservative estimates indicate that between five and ten percent of urban children aged one through five have accumulated excessive amounts of lead in their bodies. Although most of these children may not have any outward symptoms, the amounts of lead are large enough to cause serious harm. Lead poisoning affects nearly all the tissues of the body, but causes the greatest damage to the brain. If a child with concentrated blood lead levels does not receive treatment, he will suffer permanent brain damage.

Working out of one wing of the sixth floor, the Lead Poisoning Prevention Program operates the statewide laboratory for the measurement of blood levels in any child screened in Massachusetts. Since its inception, the program has screened 40,000 children. Those whose blood contained over 50 micrograms per 100 milliliters have been seen by physicians and treated, or followed carefully, depending on the degree of poisoning. Children with levels between 40 and 50 are also carefully followed. The program will soon add the measurement of erythrocyte-free protoporphyrin as an additional indicator of lead poisoning.

In addition to the testing in the laboratory, the program is responsible for six workers in the field who train community groups and health agencies to organize local screening programs, and to inspect housing for lead-based paint. Program workers also act as community advocates in assisting in the court prosecution of recalcitrant landlords who fail to rid their dwellings of dangerous levels of lead.

Mandatory reporting of children with lead poisoning was written into the statute that established the Lead Poisoning Prevention Program. The program provides the necessary forms for the listing of information by physicians, public health nurses, hospitals and other institutions that care for children.

Virus Laboratory

For the first time since the virus diagnostic service and research program were instituted by the Department in 1946, in cooperation with the Harvard Medical School, the Virus Laboratory has physically joined the other Diagnostic Laboratories. The two major sections of the Virus

Laboratory, which occupies the entire seventh floor, are isolation and serology. Offering support services to these units are the tissue laboratory, the quality control laboratory and the central processing laboratory. The latter receives all specimens and cultures and sorts them, according to individual testing assignments, for delivery to the proper unit or units.

When outbreaks of encephalitis occur, as they did in horses in southeastern Massachusetts in 1973, and in humans in August 1974, the isolation section goes into action. This is the laboratory devoted to the detection and identification of arboviruses in the state, principally Eastern equine encephalitis, as well as other viruses responsible for acute and chronic enteric and respiratory illnesses. Charged with the surveillance of influenza, the isolation section works in close collaboration with the Division of Communicable and Venereal Diseases.

The arbovirus laboratory works in conjunction with the Encephalitis Field Station in Lakeville, which started originally in 1960 as a joint activity of the Division of Communicable Diseases and of the United States Public Health Service in Taunton. Mosquitoes trapped at the Field Station, and at several other sites in eastern Massachusetts, are collected, identified according to species, pooled and brought to the laboratory. They are then tested and identified in chick embryo tissues. Since 1956, yearly surveillance has demonstrated the presence of Eastern equine encephalitis virus, Western equine encephalitis virus, and California virus in a variety of mosquitoes, and Powassan virus, which is tickborne, among the arboviruses of the area.

The serology section comprises the largest group of laboratories through which the highly

communicable virus diseases are diagnosed. The complement fixation (CF) test may well be called the backbone of the serology section. Sensitive, sophisticated CF tests are performed to help physicians make the proper diagnosis of various virus diseases, including influenza, polio, encephalitis caused by mumps, measles and chickenpox, in addition to a wide variety of severe respiratory infections. The problem of a correct diagnosis is complicated by the existence of 50 viruses that may cause the same respiratory symptoms: for example, mumps and influenza, adenoviruses and measles, or rubella and mycoplasma pneumonia. Although a positive identification may come when the patient is already convalescing, the diagnostic tests are of great value to the epidemiologist concerned with the many factors associated with virus outbreaks or epidemics.

A major part of the serology section is the rubella testing for premarital medical certificates. The knowledge that a female who contracts rubella during the first trimester of pregnancy may give birth to an infant with severe deformities that

may include retardation, deafness, cataracts or bone defects, resulted in the establishment of a broad rubella testing program. Twenty percent of the specimens received in the serology laboratory are for serodiagnosis of acute disease. The remaining 80 percent are for testing for premarital certificates, and for prenatal immunity screening. According to laboratory statistics, about 85 percent of the female population in Massachusetts is now immune to rubella as a result of natural exposure to the disease itself, or of statewide immunization programs.

An amendment to Section 28A of Chapter 134 of the Acts of 1974 now requires all women of child-bearing age to have a premarital blood test for rubella in addition to the one for syphilis. The law, however, does not make it mandatory that females who have no immunity to rubella receive an immunizing vaccine. Under the law, however, physicians must inform their women patients of the risks of contracting rubella during pregnancy.

The rubella testing program has saved the Commonwealth the costs of lifetime care of



unknown numbers of congenitally deformed children. The savings in human potential and grief are incalculable.

Another large program in the Virus Laboratory is the differential testing for venereal diseases, many of which are generally not known to the lay public. Lymphogranuloma venereum, cytomegalic inclusion disease, and genital herpes are venereally acquired infectious diseases. These viruses and virus diseases during pregnancy are responsible for congenital defects ranging from stillbirths to mental retardation. Infections with these viruses can be as devastating as rubella. Unfortunately, they appear to be increasing, especially in young adults.

More tests have been added to the number now performed in the Virus Laboratory as the specific causative organisms responsible for disease were found in a patient's secretions or excretions.

The Virus Laboratory is now doing much more testing to aid physicians in patient management since there are many viral illnesses that result in chronic diseases like cancer and diabetes. This aspect of the laboratory's work will, undoubtedly, grow as more knowledge is accumulated on these and other chronic diseases.

Division of Biologic Laboratories

Although more and more individuals are aware of the fundamental discoveries in medical science and their potential significance for human health and well-being, they are less familiar with the careful developmental research required before these discoveries can be transformed into practical

products for use in medical practice. Nor are they aware of the meticulous attention to detail necessary to produce and distribute safe and effective products.

Under the supervision of a roster of distinguished directors, the Division of Biologic Laboratories has not only kept pace with and contributed to the development of new concepts in medical science, it has made available to the people of Massachusetts biologic products of the highest standard. The initial responsibility of the Antitoxin and Vaccine Laboratory, as it was then called, was the production of diphtheria antitoxin in 1894. Distribution of the first antitoxin began the following year.

In 1904, the laboratory moved from the Bussey Building to permanent quarters, a two-story building and a stable, both of which are still in use. In 1946, a complete wing was added to the original building to provide more space for the production and distribution of new products. This was the first State Laboratory for Plasma Fractionation in the world. Completion of the new State Laboratory Institute Building made available to the Biologic Laboratories additional laboratories on the eighth floor for research projects on hepatitis and highly infectious agents, and the use of other facilities.

Over the years, the Biologic Laboratories have made significant contributions to the development not only of diphtheria antitoxin, but to a broad spectrum of serums and vaccines, some of them now of historic interest only.

As part of a collaborative program with the Blood Grouping Laboratory of Boston and the Massachusetts Red Cross Blood Program, the

Laboratories, in 1968, began the distribution of Rh immune globulin (human). By January 1972, the Department began free statewide distribution of the globulin, to be used in eradicating Rh-type erythroblastosis of the newborn. A new method for producing smallpox vaccine was devised to yield a better product, and a statewide distribution was begun in 1971. Another signal program of the Biologic Laboratories is the production of an improved anti-lymphocyte globulin to assist surgeons in preventing rejection of renal transplants.

The Division of Biologic Laboratories played a foremost role in the national program to establish the feasibility of testing blood of donors for hepatitis-associated antigen before its use. Hepatitis B antisera, first produced at the Laboratories in 1970, led to the enactment of the first state law in the country to mandate such procedures. The Division again took a leading part in a national series of studies to determine whether a special immune serum globulin is more effective than conventional gamma globulin in preventing type B hepatitis (formerly known as serum hepatitis). The new hepatitis B immune globulin (human) for the entire national program was produced at the Massachusetts laboratories.

The Biologic Laboratories have collaborated with local scientists and institutions, as well as with those in distant parts of the world, in research and production. The Division has also provided training opportunities to medical and other students in the area. Visitors from many countries visit the Biologic Laboratories every year for training in some aspect of biologic production, or for consultation in the preparation or evaluation of biologics.

Temples of the Future

Clearly, the wide range of services provided by the laboratories of the State Laboratory Institute make them an indispensable part of the health services provided the people of the Commonwealth by the Department of Public Health. The variety and accuracy of the tests performed and of the products produced will, undoubtedly, play an increasingly important role in the identification and management of disease. Over 100 years ago, in 1871, the great Louis Pasteur expressed with prophetic insight these thoughts that are appropriate to the dedication of the new building of the State Laboratory Institute:

"If you are moved by conquests made in the cause of humanity, if you are overwhelmed by the amazing effects of the electric telegraph, of anaesthesia, and of so many other beneficial discoveries, and if you wish your country to participate in the unfolding of these wonders, then take an interest, I beseech you, in those sacred places which we call laboratories. Ask for them to be adorned for they are the temples of the future. It is there that humanity is improving itself and gaining in strength and grandeur. It is there that man is learning to read the works of nature, which are works of progress and universal harmony, whereas man's own works are too often concerned with barbarism, fanaticism, and destruction."

HIGHLIGHTS IN THE HISTORY OF THE STATE LABORATORY INSTITUTE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

- 1894 Diphtheria antitoxin produced in horses at the stable and main building of Harvard's Bussey Institute in Forest Hills under the ad hoc direction of Joseph C. Goodale, M.D.
- 1895 Theobald Smith, M.D., appointed first full-time Director of Antitoxin and Vaccine Laboratory; instituted diagnostic laboratory services.
- 1896 Sputum examination for tubercle bacilli and blood films begun for malaria.
- 1897 Diagnostic service facilities transferred to the State House.
- 1904 Smallpox vaccine (bovine) and silver nitrate manufactured in new two-story brick stable and laboratory building.
- 1912 Typhoid vaccine production begun.
- 1914 Bacterial diagnostic services under Miss Edith Beckler placed in the newly created Division of Communicable Diseases.
Newly named Division of Biologic Laboratories directed by Milton J. Rosenau, M.D., Harvard Medical School.
- 1915 Free syphilis serology testing begun by William A. Hinton, M.D., Chief of new State Wasserman Laboratory located at Harvard Medical School.
Schick test materials manufactured by Biologic Laboratories.
- 1916 Rabies diagnostic services begun under the direction of Dr. Hinton.
- 1917 Typing of pneumococci from pneumonia patients begun by Diagnostic Laboratories
- 1918 Diphtheria toxin-antitoxin for active immunization produced in a newly-extended wing of the Laboratories.

Anti-pneumococcus serum produced (until 1949) by Biologic Laboratories.
- 1920 Benjamin White, Ph.D., named first full-time Director of Biologic Laboratories.
- 1925 Production of antitoxin for scarlet fever, and antisera for measles, influenza bacillus, and other agents begun.
- 1927 Hinton's improved flocculation test for syphilis devised and utilized until 1973.
- 1932 Diphtheria toxoid produced, gradually replacing toxin-antitoxin for active immunization.
- 1933 Convalescent sera of human origin obtained and distributed for treatment of poliomyelitis and scarlet fever.
- 1934 Elliot S. Robinson, M.D., succeeded Dr. White at Biologic Laboratories.
Placental extract, the precursor of immune serum globulin, prepared in collaboration with Dr. Charles F. McKhann, Harvard Medical School, and distributed for prevention and modification of measles.

- 1939 One hundred clinical laboratories enrolled in the Diagnostic Laboratory's Laboratory Approval Certification Program newly created by Legislature.
- 1941 Blood products, including normal serum albumin and immune serum globulin, initiated during the next decade.
- 1946 Blood fractionation begun in new Biologics building as part of collaborative program with Massachusetts hospitals.
- 1947 Diagnostic Laboratory and Wassermann Laboratory relocated and united in the Bussey Building from which the Diagnostic Laboratory had moved 50 years earlier.
Robert A. MacCready, M.D., succeeded the recently retired Miss Beckler.
- 1949 James A. McComb, D.V.M., succeeded Geoffrey Edsall, M.D., in charge of Biologic Laboratories since 1942.
Tetanus toxoid, diphtheria toxoid, and pertussis vaccine with modern levels of purity and potency developed.
- 1952 All laboratory activities consolidated administratively into the Institute of Laboratories with Johannes Ipsen, M.D., as Superintendent.
- 1962 First mandatory neonatal metabolic defect screening program in the nation (phenylketonuria) begun by Diagnostic Laboratories.
Human-origin tetanus immune globulin to replace the reaction-prone horse serum product introduced by the Biologic Laboratories.
- 1964 Encephalitis Surveillance Field Station, originally established 8 years earlier at Taunton, now a Diagnostic Laboratory activity permanently quartered at Lakeville. Data gathered served as valuable background for 1973 and 1974 outbreaks.
- 1965 Comprehensive streptococcal throat culture program initiated to reduce rheumatic and nephritic complications.
- 1966 Fluorescent treponemal antibody tests used to augment the Hinton test.
- 1969 Groundbreaking for new State Laboratory Institute Building.
- 1971 Morton A. Madoff, M.D., succeeded Dr. Edsall who retired after a decade as superintendent.
George Grady, M.D., now Director of Biologic Laboratories.
Kenneth F. Girard, Ph.D., Acting Director of Diagnostic Laboratories since Dr. MacCready's retirement in 1968.
A major training program and implementation of hepatitis B screening of blood donors carried out, first of its kind in the nation.
- 1972 Full-scale production and distribution of Rh Immune Globulin for prevention of neonatal disease.
- 1974 Beginning in January, new building occupied in phases. Virus Laboratory and newly created Lead Poisoning Control Program included.
A bridge connects to the Biologic Laboratories; all laboratory activities except the Encephalitis Field Station now together with common support services.

STATE LABORATORY INSTITUTE

Morton A. Madoff, M.D., M.P.H., Superintendent

George F. Grady, M.D., Director Health Services,
Biologic Laboratories

Kenneth F. Girard, Ph.D., Acting Director of Health
Services, Diagnostic Laboratories

Robert Klein, M.D., Director, Lead Poisoning
Prevention Program

George G. Wright, Ph.D., Assistant Director of Health
Services, Biologic Laboratories

Marvin L. Mitchell, M.D., Assistant Director of Health
Services, Applied Laboratory Programs

Harvey Levy, M.D., Assistant Director of Health
Services, Metabolic Disorders Program, Diagnostic
Laboratories

Rachel Benjamin, M.D., Program Specialist in Medical
Care, Rh Program Director

Leonard Marcus, V.M.D., M.D., Director of Health
Services, Zoonotic and Parasitic Diseases

Robert Gilfillan, Ph.D., Chief, Virus Laboratory,
Diagnostic Laboratories

Lewis Larsen, B.A., Chief, Blood Processing
Laboratory, Biologic Laboratories

Leo Levine, B.S., Chief, Antitoxin and Vaccine
Laboratory, Biologic Laboratories

Marion B. Holmes, B.S., Chief, Bacteriology
Laboratory, Diagnostic Laboratories

Doris Johnson, B.S., Senior Bacteriologist-in-charge,
Laboratory Improvement Program

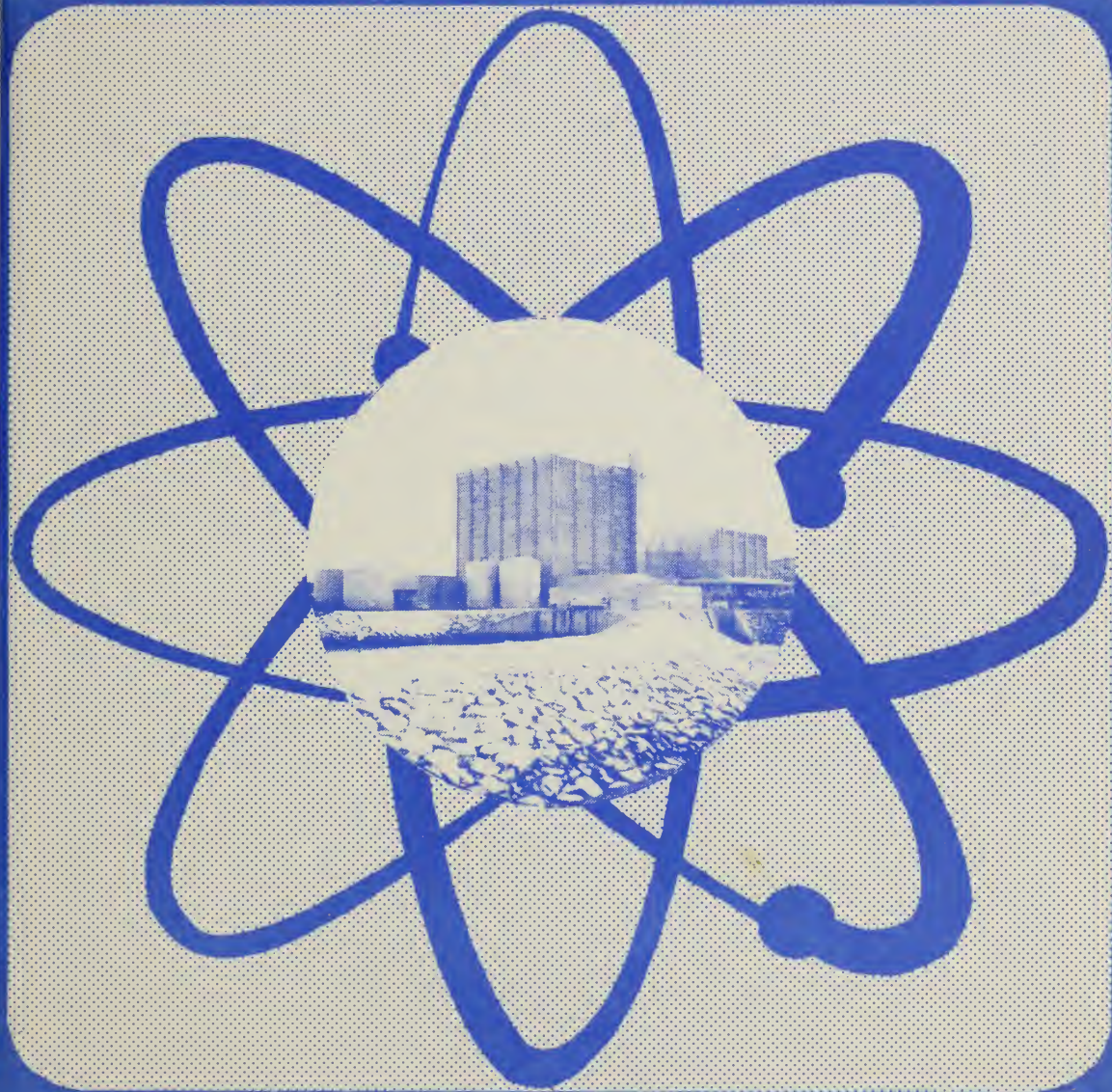
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of Public Health
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Boston, Mass. 02111

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COMMONHEALTH



Massachusetts department of public health

volume 4 number 1 Winter 1975

- Cover — Pilgrim I Nuclear Power Plant,
Plymouth, Massachusetts. Photo by
James Mackenzie.

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David J. Sencer



Massachusetts Department of Public Health
Office of Health Education
600 Washington Street
Boston, Massachusetts 02111

Publication of this document approved by
Alfred C. Holland,
State Purchasing Agent. No. 15.

The Department complies with the
Civil Rights Act, Title VI, 1964.

Second-class postage paid at Boston, Mass.

COMMONHEALTH

Winter 1975 Vol. 4, No. 1 (Series II)

Quarterly publication (Winter, Spring,
Summer, Fall issues) of the
Massachusetts Department of
Public Health
600 Washington Street
Boston, Massachusetts 02111

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NUCLEAR POWER

Risks and Benefits

Charles M. Spooner, Ph.D.

Foreword

The Massachusetts Commission on Nuclear Safety was created under Executive Order 110 in August 1974 to investigate hazards associated with the nuclear power industry and to ensure that all present and future nuclear power facilities in the state present a minimum danger to its citizens.

The members, listed below, represent a variety of fields, and were chosen for their professional competence in nuclear technology and for their public concern. Consideration was given for a balance of opinion regarding nuclear safety. The Commission held six meetings and made two site inspections of existing nuclear power facilities in Massachusetts. Public hearings will be conducted during the latter part of April 1975, both in Boston and in the Amherst-Springfield area, to assess the feelings of the public on the development of nuclear power. The final report of the Commission will be available by mid-summer 1975.

MASSACHUSETTS COMMISSION ON NUCLEAR SAFETY

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David J. Rose, Ph.D.
Department of Nuclear Engineering
Massachusetts Institute of Technology

Charles M. Spooner, Ph.D., Director
Commission on Nuclear Safety
Massachusetts Department of
Public Health

Charles M. Spooner received his B.Sc. from McMaster University in Ontario, Canada. He did his graduate studies at the Massachusetts Institute of Technology, which granted him both his M.S. and Ph.D. degrees in Nuclear Geochemistry. Following postdoctoral studies, Dr. Spooner taught for four years at Michigan State University, East Lansing, where he held the position of Assistant Professor of Geology.

NUCLEAR POWER -- RISKS AND BENEFITS

In its brief history, the nuclear reactor has offered both a nonpolluting and a seemingly abundant source of energy for electrical power. The recent run-away foreign pricing of oil and the rising costs of coal have stirred national concern over the development of environmentally acceptable, cheap and plentiful sources of power. Solar, geothermal, tidal and wind energy offer solutions but suffer from a lack of technical development on a scale needed to satisfy demand by the utilities. For tidal power to amount to anything, the entire eastern seaboard of the United States would have to be dammed. Large-scale use of the sun and wind as prime movers is not so attractive since they are not constant sources, and the multi-million dollar development of an intermittent source is simply not good economy. Wind and solar energy may, however, be of effective use as back-up systems for residential use. Geothermal energy is impractical for the New England area; even in geologically suitable areas, such as the Imperial Valley of California, technical problems have taken their toll. For example, the high "hardness" of the steam causes rapid deposition of scale in the pipes.

Intensive R & D

Nuclear power suffers from none of these shortcomings. In addition, it has received intensive research and development from the Atomic Energy Commission for about 25 years. At one point, back in the '40's, the promise of

cheap nuclear power prompted one physicist to predict that there would be "no need to meter it." Nuclear plants cost more to build than conventional plants: recent quotations for plants to go into operation by 1980 run over \$700 per KWH installed capacity. A typical 1,000 MW(e)* plant would then cost over \$700 million — the capital investment for the 200 planned electrical plants borders on the net worth of all the utilities! The bargain is in the fuel. When operational, a plant such as Pilgrim I at Plymouth, Massachusetts, will produce power at 20 mills/KWH compared to 25 mills/KWH for oil-fired plants and 24 mill/KWH for coal-fired plants. These are estimated prices for 1985 made by the Arthur D. Little Company that were proposed before the oil-price excursions began. The differences, however, are significant. In terms of energy equivalence, the output of one uranium miner is equal to that of 25 coal miners. This latter point has some bearing on one of the health aspects of a coal economy: the societal costs from pneumoconiosis (blacklung disease) amount to \$1 billion annually. It is difficult to place a societal cost on the property damage, mortality and morbidity resulting from the burning of coal.

Despite its apparent attractiveness, nuclear power is in trouble. The atomic bomb gave it a bad name though many nuclear scientists found some moral redemption in harnessing atomic energy in service to Man. This idea may have found public acceptance; but the fear of atomic energy, especially radioactivity, persists and is, *MW(e) refers to megawatts electric.

in fact, growing despite efforts to inform the public. Although X-rays, radiopharmaceuticals and a variety of toxic chemicals have found acceptance in our society, other forms of radioactivity are highly suspect. Public attention has focused on the largely unknown genetic effects of radioactivity on future generations. Other concerns have centered on the consequences of the release of fission products into the environment whether they be bomb produced or the result of a serious reactor accident. Early plans for the AEC Plowshare Program to build harbors and other large scale projects by detonating a nuclear device are now clearly unacceptable to the public.

The type and construction of the plants themselves are controversial. In the United States, only the light water-cooled reactor (LWR) is in use or on order for power generation. This type uses ordinary water as moderator with the core contained in a massive steel pressure vessel. Within this category are two basic reactor designs: the boiling water reactor (BWR) in use at Pilgrim I and the pressurized water reactor (PWR) at Yankee Rowe. In the BWR, the steam generated in the reactor core passes directly to the turbine. The PWR operates at a higher pressure and temperature but does not boil. The heated water passes through a heat exchanger that produces steam for the turbines in a separate loop.

Table 1

Data for Nuclear Power Plants in Operation in Massachusetts

Reactor	Type	Manufacturer	Date of Initial Operation	Power Output
Yankee Rowe Rowe, Mass.	PWR	Westinghouse	June 1961	175 MW(e) *
Pilgrim I Plymouth, Mass.	BWR	General Electric	December 1972	670 MW(e)

*MW(t), megawatts thermal, is derived by dividing MW(e) by the efficiency, about 32%.

Risk, the product of probability of an event occurring and its consequences, is an element of every day life that varies according to the living habits and activities of the individual. Some areas can be avoided or lowered by each person as a matter of choice. By consulting a source such as the U.S. Statistical Abstract, one can find the annual number of motor vehicle

Report, which was commissioned to establish a figure for maximum credible damage for insurance purposes under the Price-Anderson Act of 1957. Without attempting to make an estimate of the probability of such an occurrence, the Brookhaven Study based its estimate on the worst possible accident. This would involve core meltdown, a breach of the

Table 2
Individual Fatality Risks per Year

Accident Type	Individual Chance per Year
Motor Vehicle	1 in 4,000
Falls	1 in 10,000
Fires	1 in 25,000
Drowning	1 in 30,000
Firearms	1 in 100,000
Air Travel	1 in 100,000
Falling Objects	1 in 160,000
Electrocution	1 in 160,000
Lightning	1 in 1,200,000
Tornadoes	1 in 2,500,000
Hurricanes	1 in 2,500,000
All Accidents	1 in 1,600
Nuclear Reactor Accidents	1 in 300,000,000*

*Reactor Safety Study (WASH-1400), Summary Report, p. 2.

fatalities. This number divided by the total population exposed gives the individual chance per year for death from this cause on the average. Table 2 gives some indication of common risks compared to those arising from nuclear power. Details of this latter estimate are given below.

The publication of the Reactor Safety Study in August 1974 accelerated the nuclear safety debate. The controversy stems, in part, from an earlier report to the AEC, the Brookhaven

containment and gross contamination of the environment. On the other hand, the Reactor Safety Study was undertaken for an entirely different purpose. The two-year Study was sponsored by the AEC to estimate the public risks that could be involved in potential accidents in large commercial power reactors of the type now in use. Risks had to be estimated, rather than measured, because the 50 or so such plants now operating have had no nuclear accidents. This is the first analytical attempt to delineate the sequences and consequences of a

reactor accident. The Study uses a quantitative form of engineering operation called Event Tree and Fault Tree Analysis, which entails the identification of all sequences of events or malfunctions leading to some serious consequence. Coupled with this are the failure rates of the individual components comprising the various systems. By combining fairly well known data for the reliability of fuses, valves, motors and other such hardware, the probability of their failure in concert can be determined. The critical part of such analysis lies in the complete identification of all possible accident modes of significance. This last point has received widespread criticism and is still under debate.

Concept of Risk

The Study, amounting to about 50-man-years of effort and \$3 million in costs, arrives at a figure of about one reactor accident with serious consequences in 17,000 years of operation. If this figure remains constant in the future, with some 1,000 reactors in operation, one may expect one accident every 17 years. This same risk would lead to one chance in 150,000,000 for personal injury and one chance in 300,000,000 for death, based on 100 operating reactors (Figure 1).

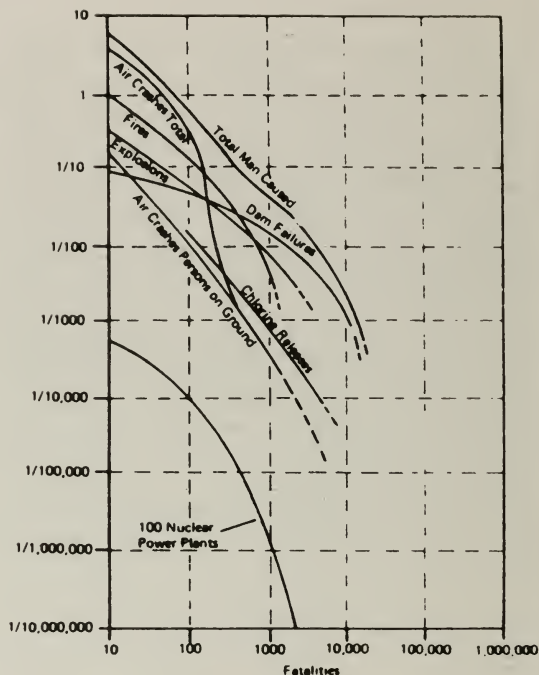


Figure 1. Frequency of Fatalities Due to Man-Caused Events*

*An example of the numerical meaning of Figure 1 can be seen by selecting a vertical consequence line and reading the likelihood that various types of accidents would cause that consequence. For instance, in Figure 1, 100 plants would cause this consequence with a likelihood of one in 10,000 per year. Chlorine releases are about 100 times more likely, or about one in 100; fires are about 1,000 times likely, or about one in 10 per year; air crashes are about 5,000 times more likely, or about one per 2 years. (Reactor Safety Study, Wash-1400, August 1974)

The risk from nuclear power plants arises from the high levels of radioactivity produced in the fission process. Although only minute amounts escape during controlled operations, a severe accident could release prodigious amounts of radioactivity into the atmosphere as a cloud. The most severe type of accident producing this condition involves a meltdown of the reactor core. Such serious failure could be initiated through a series of component breakdowns, aided perhaps by repeated human error. This situation could also arise from an external event such as an earthquake.

The numerical results of the Reactor Safety Study are hard to apply because such detailed form of reliability analysis is only in its beginning stages of application. Although no calculation can predict when a particular set of failures may take place, some with reportedly low probabilities have, nevertheless, a disturbing way of happening. The principal difficulty in any study of this nature comes from the lack of reactor operating experience, especially when compared to many other areas of industry. For example, failure probability models for automobiles would be excellent considering the number of cars built since 1930 and the number of operating miles. It is doubtful that the analogy can be further used to predict vast improvements in operating reliability since one is dealing in entirely different markets: automobiles and nuclear power plants.

The transportation of radioactive materials also presents some unique hazards though not

from the shipment of new fuel. The build-up of fission products during reactor operation requires removal of the fuel bundles and their shipment to fuel reprocessing centers. The stiff design criteria for the shipping casks make them extremely safe on the highways. The shielding alone is such that the spent fuel amounts to only 3 percent of the gross vehicle weight. Stringent AEC shipping safeguards make this type of traffic safer than those involving a variety of hazardous materials — as supported by the near perfect accident record for nuclear materials. Turnpike authorities, recognizing the overall decrease in risk to the motoring public, are only now beginning to allow these types of shipments on their highways. These roads generally have the lowest accident rates in their state since they offer the most direct route, thus lowering the transit time through the region. The limited access en route tends to discourage vandalism or sabotage and, in addition, simplifies the surveillance by law enforcement agencies during the shipment. Rail shipment is attractive for much the same reason. In Massachusetts, however, there are no rail facilities at the two operating plants.

Problem of Waste Disposal

The radioactive waste disposal problem is one of almost philosophical magnitude. The problem of suitable storage of long-lived fission products and actinides (elements having higher atomic numbers than uranium) received public attention after the Lyons, Kansas situation in the late '60's. The AEC had proposed to store these wastes in concrete casks in a salt mine for

geologic time. Quite apart from the qualities of the salt itself, the threat of earthquakes, even in this geologically quiescent part of the continent, ruled out this method perhaps for any locality in the country. Although it may prove expensive, many nuclear scientists see considerable merit in the chemical separation of the short-lived fission products from the actinides. The former could be fabricated into a ceramic or other inert form and be buried. The latter, themselves fissile, could serve as additional nuclear fuel. This disposal method would require much shorter decay times, on the order of several hundred years, to become safe to the environment.

Health Effects

The Commission on Nuclear Safety is also concerned with the health effects arising from chronic low-level exposures to ionizing radiation from nuclear plants even under normal operating conditions. Low-level radiation hazards are difficult to estimate because of the extremely low frequency of the expected results. The only approach open to the epidemiologist is to study small populations that have received large exposures. The required extrapolation to estimate low dose effects is controversial; one faction believes that no dose is without effect and the other, the threshold group, believes that low doses have no effect. An associated problem involves the long latent period before symptoms may appear, which is a difficulty in studying diseases induced by air pollution. In addition, cancers resulting from radiation must be separated from those resulting from other environmental causes.

The rem, Roentgen Equivalent Man, is the unit of dosage used to measure radiation burdens to the body and its organs. This unit takes into account not only the absorbed energy but also the biological response to a particular radiation. To examine particular man-made nuclear hazards, investigators must look at natural background sources of exposure to the whole population. Each individual is exposed to cosmic rays, external radiation from potassium, uranium and thorium and their decay products in rocks, soils, in water and in the air. There is also internal radiation exposure from these naturally occurring radioisotopes deposited in the body by ingestion and inhalation. Radiation from medical X-rays constitutes the greatest man-made source of exposure to the general population, but is not included in maximum permissible dose (MPD) calculations. The AEC limits radioactive doses to the whole body to 0.170 rem/year for the general population and 5.0 rem/year for whole body occupational exposures. Table 3 indicates some dose levels that are encountered by the population and individuals in some cases.

The figures given in Table 3 indicate extremely low doses to the general population from nuclear power plants under normal operating conditions. The risk associated with exposure to ionizing radiation is estimated at one to ten cancers per million population per year per rem. Thus if one million people received one rem, one to ten new cancers per year would be "expected." The American Cancer Society estimates 21,000 cancers in Massachusetts in 1975. Since the population of the state is about six million, 3,500 cancers per

Table 3

Average Annual Low Dose Sources of Radiation

Source	Dose
Natural background	100 to 150 mrem/year* (1000 mrem/yr in some areas)
Diagnostic X-rays	20 to 72 mrem/year**
Therapeutic X-rays	3 to 5 mrem/year
Radiation cancer therapy (^{60}Co)	4000 to 7000 rem (localized)
Worldwide global fallout	4 mrem/year (1969)
Nuclear fuel reprocessing plants	0.008 mrem/year (1970) 0.2 mrem/year (2000)
Nuclear power reactors	0.002 mrem/year (1970) 0.17 mrem/year (2000)*** 0.5 mrem/year (plant boundary)

* 1 rem equals 1000 mrem (millirem).

** Data from Little JB: Environmental hazards: Ionizing radiation.

N Engl J Med 275: 929-938, 1966; and BEIR Report, The Effects on Populations of Exposure to Low Levels of Ionizing Radiation, National Academy of Sciences, 1972.

***Exposure to the general population.

million per year are expected to occur "spontaneously" in Massachusetts. It would be practically impossible to detect these six to 60 new cancers arising from one rem exposure. It would appear then that the present and projected increases in dose from nuclear power plants, under normal operating conditions, would cause no measurable increase in cancers or leukemia.

Federal and State Programs

Nuclear power reactor technology presents, at almost every turn, unique large-scale problems requiring scientific and public-policy judgments that will have lasting effect. Only the highlights have been discussed here. From the risk point of view alone, scientists are dealing with large exposed segments of the population

who have little practical choice over its lowering; however, this is also the case with health risks associated with the burning of fossil fuels. Although some accidents will surely occur, whether here or in some other country, the statistics indicate that efforts to minimize the consequences are obviously feasible and necessary. It is not sufficient to use reactor safety studies to justify lowering of safety standards. There must be federal and state programs to monitor carefully reactor operating procedures, to carry out feasible plans for evacuation, and to cooperate with utilities in the updating of reactor safety features as they become available.

DEDICATION of the State Laboratory Institute Building

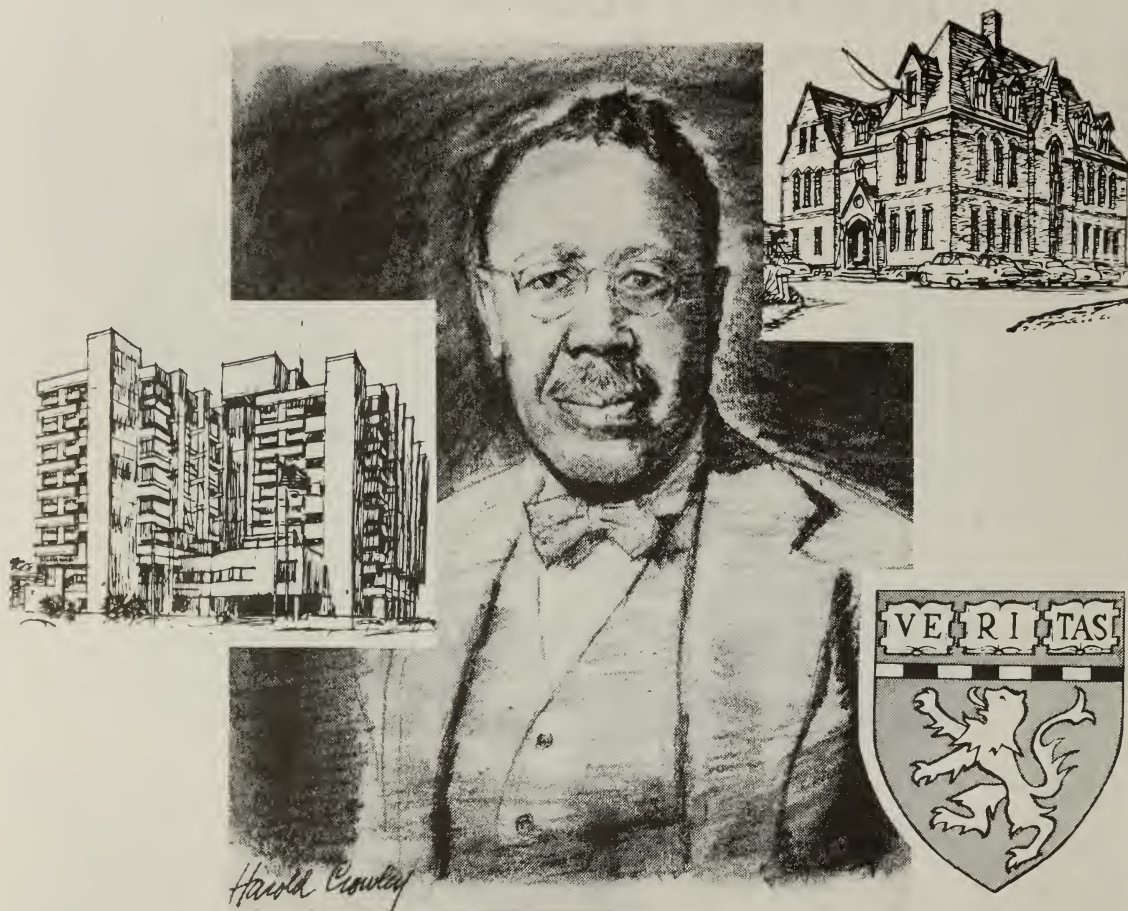
Oct. 11, 1974



A TRIBUTE TO WILLIAM A. HINTON, M.D.
Vernal Cave, M.D., President
National Medical Association

We gather today to dedicate this beautiful new edifice, the State Laboratory Institute Building, to be operated by the Massachusetts Department of Public Health. We seize this opportunity to further perpetuate the memory and the meaning of the life of William Augustus Hinton, who for the greater part of his professional life labored in these intellectual

environs to add to the sum of human knowledge and to contribute to the health of mankind. Although Dr. Hinton was born to emancipated slaves in Chicago in 1883, his brilliant mind was never shackled. When he and his family moved shortly thereafter to Kansas City, an inkling of the kind of man he was to become could have been garnered from the fact that he graduated from high school in that city in 1899 at the age of 16 as the youngest graduate in that school's history. As with many Blacks, restricted by inadequate financial



William A. Hinton, M.D.
1883-1959

resources and the inhibiting disadvantages of being a person of color, he was able to achieve his ambition of becoming a physician only by taking a circuitous route to his objective. This included teaching embryology at Meharry Medical College and other teaching assignments in Nashville, Tennessee, and later in Langston, Oklahoma, where he met Miss Ada Howes, who became his lifetime mate and mother of his two daughters.

In 1912, thirteen years after this brilliant young man finished high school, he was awarded the degree of Doctor of Medicine from Harvard Medical School, having completed the four-year course in three with honors. He continued his association with that institution in one post or another for the remainder of his professional life. Brilliant though he was, the Boston hospitals of his day had no place on their staffs for a physician of color—even as we note sadly that the Boston of our day has problems with places for people of color in some of its schools. It is interesting and ironic to note, as we have seen in other careers in which prejudice has served as roadblocks to certain pathways, that Dr. Hinton achieved his place in medical history because of that very denial. For now, unable to lay his hands on the sick of any Boston hospital, he studied and worked on the sera from some of these patients when he became an assistant in the Harvard Medical School's Wassermann Laboratory. It was here that he became aware of the deficiencies and the limitations of the famous Wassermann test for syphilis and labored to devise a more reliable test.

When in 1915, the Wassermann Laboratory was transferred from Harvard University to the

Massachusetts Department of Public Health, Dr. Hinton was placed at its head. Here he continued his investigations. In 1927, he developed an improved test, a flocculation test for the diagnosis of syphilis, which, including modifications in the several years that followed, became and remained the main laboratory test for the diagnosis of syphilis in the State of Massachusetts. His test became widely known and was widely utilized for more than two score years. In 1936, Dr. Hinton published the first medical textbook written by any American Black. This was entitled *Syphilis and Its Treatment* and was published by the MacMillan Press. So scholarly was his work and so effective was his ability to communicate with students that he was elevated to the position of Clinical Professor of Bacteriology and Immunology at Harvard University in 1949, the first Black to attain the rank of professor in the history of Harvard University. As an index of the significance of this pioneering achievement, I must remember to ask someone before I leave how many professors Harvard has today.

It is for me a personal pleasure to have the opportunity to speak on this occasion for three reasons:

First, as a person who has worked for many years in syphilology, I am aware and appreciative of Dr. Hinton's legacy to medicine in this field.

Second, [I applaud him] for his work, in his own way, to advance the cause of human rights. A modest man, he declined the proffered honor of being awarded the Spingarn Medal by the National Association for the Advancement of Colored People because, as he perceived it, his

contributions to medicine were not sufficiently significant.

Third, as President of the National Medical Association, I am proud that one of our departed members is being honored in this fashion for his accomplishments. I commend to your attention the November 1973 issue of the *Journal of the National Medical Association*, which was dedicated to Dr. Hinton and which contains a biographical sketch by the noted medical historian, Dr. W. Montague Cobb.

After a productive life, which included 22 scientific publications and many travels, Dr. Hinton died in 1959 leaving his entire modest fortune of \$75,000 to his alma mater in the form of the Dwight D. Eisenhower Scholarship Fund for graduate students. Dr. William Augustus "Gus" Hinton was born of low estate, a product of the marriage of former slaves. Thriving on education and motivation, he grew to become a giant of his time and a name for all time. Hence, this ceremony and this dedication are most fitting and most proper.



A TRIBUTE TO THEOBALD SMITH, M.D.

Kenneth F. Girard, Ph.D.
Acting Director, Health Services
Diagnostic Laboratories
State Laboratory Institute

I should like first to express my thanks for this opportunity to reflect briefly about the first director of the Massachusetts State Laboratory Institute, a man to whom we all here in Massachusetts and indeed throughout the world are very much in debt. Secondly, I should like to express to Mr. Philip H. Smith, to Dr. Dorothea Smith Farr and Mrs. Robert F. Foerster, Dr. Smith's son and daughters, our regrets they were unable to attend. In a letter

received here on September 29, 1974, Mr. Philip Smith added, "Dorothea is much too invalided to make the trip and I am in the process of recovering from an operation. I am, of course, delighted to have the new structure named for my father and to have a photograph of it. I wish you every success in this advance in public health."

What of the man himself whom we honor here today? Surely it would be presumptuous of me to attempt to review the several excellent biographical sketches that have already appeared by Zinsser, McKinley, DeKruif in his *Microbe Hunters*," and more recently by Dr. Claude Dolman of the University of British Columbia. However, I should be remiss if I failed to convey to you at least some general picture of this remarkably gifted man who spent so much time here on these grounds, and who played such an important role in the evolution and development of these public health laboratories. It is no exaggeration to say that over these past few weeks as I researched the life and works of this bacteriologist, the more I learned, the more incredible did his overall achievements become. I had to agree with DeKruif's assessment given in the opening of his chapter on *Ticks and Texas Fever*." He was the first, and remains the captain of American microbe hunters." There is a passage in Goldsmith's *Deserted Village* in which the poet presents an amusing but vivid description of the local village preacher with which I'm sure many of you are quite familiar:

"Truth from his lips prevailed with double sway,
And fools that came to scoff remained to pray;"
and later

"And still they gazed and still the wonder grew
That one small head could carry all he knew."

One might easily characterize Dr. Smith in such a manner. He was certainly as persuasive as Goldsmith's preacher but, instead of articulate sermonizing, used the sheer weight of evidence based on observations made with meticulous detail and patience to convince others of their validity. His 304-page monograph (with Kilborne) issued as Bulletin #1, in 1893, entitled, "Investigations Into the Nature, Causation, and Prevention of Southern Cattle Fever" is certainly a masterpiece and an excellent illustration of the scientific method. DeKruif, and later Bulloch, stated that never has there been written a more simple but at the same time more solid answer to an enigma of nature. Shortly after publication of this work, at the invitation of Dr. Henry Walcott, Secretary of the Massachusetts Board of Health and of President Eliot of Harvard, Smith left Washington and the Bureau of Animal Industry to come to Boston.

In 1895 he took over the directorship of the Massachusetts State Antitoxin Laboratory, and in 1896 became, at the same time, the George Fabyan Professor of Comparative Pathology at Harvard Medical School, at the then very respectable salary of \$3,000 a year. During the 20 years that followed (1895 to 1915) he published extensively. It was a period in which Smith was able to employ to the fullest his many and diverse talents for investigation, teaching, and administration. Thus the middle and normally most productive years of life, from 35-55, were spent here and he made full use of them. Some 70 of the 196 scientific publications as listed by Zinsser relate to work done here and at Harvard. The feature that impressed me most in these endeavors was the very wide range of research involving on

occasion even quite different scientific disciplines. Much of the time, of course, was spent on diphtheria, use of toxin-antitoxin mixtures for immunization, smallpox vaccine, tetanus toxin and antitoxin — things of immediate concern for the then fledgling institute. But, he also somehow found time to develop methods for determining suitability of water for drinking purposes. It was he who first used the gas tube for establishing carbohydrate fermentation patterns of bacteria, and this in turn had immediate practical applications for the bacterial toxonomists and others. He published on sewage disposal, on typhoid transmission and on tuberculosis transmission by milk supplies. He carried out studies on anthrax, glanders and poliomyelitis, on the cultivation of anaerobes, on indole formation, on the distribution of mosquitoes in New England, on malaria transmission and, with Dr. Reagh, on the nature and difference of H and O agglutinins of enteric bacilli which soon found practical application in the field of immunodiagnosis of disease.

Some things he never really got the credit for but were substantially due to him. For example, he was probably the first to observe and describe the acute, immediate, hypersensitivity reaction now known as anaphylactic shock, which was a by-product of his work with toxin-antitoxin mixtures in guinea pig experiments. In 1904, Paul Ehrlich visited these laboratories and at the time Smith related to him this peculiar reaction. Later Otto, working in Ehrlich's laboratory in Germany, confirmed Smith's findings and further clarified the reaction as being due to the horse serum content of the mixtures and the

spacing of the doses. In the older texts on bacteriology this was, in fact, referred to as the "T. Smith phenomenon"; but in the newer texts this becomes lost, and credit is usually given to the French workers, Portier and Richet. Many similar instances could be cited, which were undoubtedly the result of his eagerness to share knowledge and observations with others, as well as the credits. He himself said in 1894 in a letter to his former teacher, close friend and "confidant," Prof. Simon Gage, of Cornell, that he was content to let others do his "boosting" for him. Nor did he change in this altruistic attitude, for in a letter to Prof. Krumbhaar, of the University of Pennsylvania in 1933 — a year before he died — he said, "We must not be discouraged if the products of our labor are not read or even known to exist. The joy of research must be found in the doing since every other harvest is uncertain."

Throughout his career his investigations were never academic or a takeoff from theoretical preconceptions. In his own words he "took his problems as they were spread out before him from questions that were crying to be solved." His choice of methods — which were first reviewed in the greatest detail — were always the simplest, determined by the shortest path to the objective. He adapted his procedures with the greatest economy of purpose. He possessed an extraordinary sense for the essential and was not easily diverted by side issues. In fact, he often said that his interest in a problem usually lagged when certain results could be clearly formulated or practically applied. He possessed, in Zinsser's words, a quality of simple integrity coupled with

extraordinary intelligence, infinite patience, and a passion for technical accuracy, which in the aggregate, I think, account for his phenomenal success.

In summary, today in the small amount of literature available on the man and his works, one gets a picture of a devoted, conscientious researcher, convinced that the only way to understand disease was to go to its source and who had that keen delicate touch with nature so essential to tease-out its secrets. One envisions a man who loved music, who played the organ and piano, who loved nature and had a deep interest in the welfare of man; a man who crusaded for preventive medicine before it became a popular cause, a man who practiced economy in all phases of his life, wasting nothing that might be useful.

One also sees a picture of a man who, despite a multitude of other awards, should more than once have received the Nobel Prize — but never did. Such a man was Dr. Theobald Smith in whose honor the Albany Medical College in 1970 dedicated a laboratory to their illustrious former graduate, in whose honor the New Jersey Branch of the American Society for Microbiology is named, and in whose honor we here today do propose to name this building for him. It is particularly fitting and proper that we here in Massachusetts do this. The late Dr. William Bulloch, Emeritus Professor at the University of London, England, wrote the following words a year after Smith's death at Princeton, N. J. in his 75th year, and which provide a fitting closing paragraph to this tribute: "He (Smith) was admittedly the greatest bacteriologist produced by the United States of America. For fifty years his work was

continuous and meritorious. His numerous discoveries, many of them of a fundamental nature, entitle him to rank alongside the greatest masters of bacteriology. He was the contemporary of many of the founders of the science.... It is certain that America in days to come will look on him with that veneration with which France cherishes the name of Pasteur and Germany that of Robert Koch."



David J. Sencer, M.D.
Assistant Surgeon General
Director, Center For Disease Control
Public Health Service
Department of Health, Education
and Welfare
Atlanta, Georgia

Early in this century, Theobald Smith wrote, "The joy of research must be found in the doing, since every other harvest is uncertain." In the early days of the public health movement in this country — the days of Shattuck, Smith,

Chapin — the days of epidemic disease — the joy of working in public health was in the doing, for much was to be done and few were there to do it.

We, in public health, ran our own contagious disease hospitals; we made our own vaccines and sera; we did the vaccinating and immunizing; we boarded the ships and looked for rashes; and we ran the well baby and prenatal clinics. We did a good job.

In the 1950's, public attention began to shift its focus from disease prevention — the classic *public* concern — to the delivery of health services, previously a *private* concern. Because we, in public health, had done a good job, we thought we could do a good job in providing medical care to the indigent and the underserved. We convened a summit meeting at Arden House in 1955 to tell the country that we were going to do so. And, as we all know, we did not live up to our press releases. We had been too provincial; we had not recognized the political, social and economic realities; and we, official health agencies, fell into disrepute. An Assistant Secretary for Health refused to meet with the Association of State and Territorial Health Officers; innovative health programs were started in the Office of Economic Opportunity; Medicare is in the Social Security Administration; and Medicaid in the welfare departments. But, we have a chance, and the opportunity is at hand, to reassert ourselves if we redefine our role as not one of doing and providing, but one of *assuring* that the needed services, both preventive and curative, are not only available but are used.

As health services move more and more into the fish bowl of public attention, brought about not just by public concern, but by the increase of third party involvement, more and more we, the health providers, will be held accountable, not just for the dollars spent, but for the quality and appropriateness of the service rendered. Once again, a role for the official health agency — not to provide, but to assure. Are we to have State Insurance Commissioners putting out pamphlets on how to choose a surgeon? We must recognize our responsibility.

How do we go about the task of assuring? It is, to me, by utilizing a traditional public health technique — surveillance. Surveillance is not a passive action whereby we sit and wait for events to come to our attention. It is the active encouragement and solicitation of information, the analysis of the information, the dissemination of information, and finally the assurance that corrective action, if needed, takes place. In some situations, the official agency may take the action, as your Health Department did in courageously interfering with the shellfish industry during the paralytic shellfish problem. More often, other agencies and groups are the doers — Immunization Action Month is a good example. State and national surveillance has detected low levels of immunization. The corrective action is joint activity of private and public providers stimulated by official health agencies.

Today, in the absence of epidemics, the laboratory is more than ever essential to effective surveillance. In the days of polio epidemics, the laboratory was of relatively little help. Today, in the absence of epidemics, each

case of paralytic disease must be investigated thoroughly. Laboratory surveillance of virus in mosquitoes is the only method we have of detecting Eastern encephalitis before it strikes.

The laboratory is also essential to the surveillance and control of the sexually transmitted diseases, increasingly so with the recognition of the large reservoir of asymptomatic gonorrhea in both males and females. With your state now asking for the notification of nonspecific urethritis and genital herpes, the laboratory has a broader role to play in surveillance.

More and more, the techniques of surveillance are being applied to situations other than the traditional infectious diseases, not just to discreet diseases such as leukemia, but to conditions that can reflect changes in the environment, such as birth defects. But, perhaps more important for the future, the techniques of surveillance are being applied to the quality of health service.

The first area of health service to come under federal licensure has been the licensure of clinical laboratories. But, we do not call our federal program the Clinical Laboratory Licensure Program, we call it the Clinical Laboratory Improvement Program, as you do here in Massachusetts. The elements of a laboratory improvement program are on-site inspection, quality control, personnel standards and surveillance — only we call it proficiency testing — collecting results, analyzing, reporting back and assuring corrective action. As an example, when the Laboratory Improvement Program started, 10 percent of the laboratories

participating were using the Folin Wu method for blood glucose. The proficiency testing showed this to be the least precise, and now less than 0.1 percent use it. Here again, the official agencies' role is principally surveillance and the assurance that quality is maintained, not doing all the job themselves.

Another area to which the techniques of surveillance could be addressed has been put forth by Dr. David Rutstein. He has proposed that clusters of inappropriate outcomes of medical care could be identified by surveillance techniques that would point to inadequate delivery of health service either by the practitioner or by the system. For example, should any female die today as a result of cervical cancer? Should any child die today of tick-borne spotted fever? Lest this seem threatening, I would hasten to point out that this is not a new and revolutionary intrusion into the practice of medicine, but builds very much on the Massachusetts Medical Society's Committee on Maternal Welfare that investigated each maternal death and published their deliberations in the *New England Journal of Medicine*. Here again, it is not envisaged that it would be the job of the official health agency to do, but to assure that it is being done.

There is a real danger at the present time, one that has come to pass in other countries, that preventive-public health services will be consumed by overattention to curative-personal health service. Surveillance, community sanitation, continuing education, and traditional and needed roles of the official health agency are not found in the words of the proposed national health insurance plans.

The only agency or institution that can assure a viable, active, effective surveillance service is the official health agency since it is the only agency that serves the entire populace, well and sick, old and young, rich and poor. If we are to maintain the high level of health we have and to achieve an even higher level, we cannot maintain the necessary surveillance by relying upon the CHIP, HMO, PSRO, EPSDT, A agencies, B agencies, or the initials of

tomorrow. We must support and strengthen the initials of yesterday and today, the DPH, the Department of Public Health.

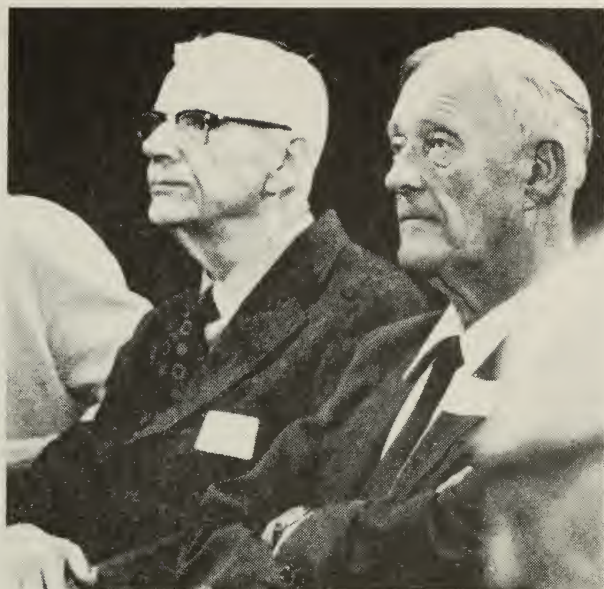
This laboratory should not be dedicated as a building. The dedication should be to the people and programs that have, throughout the 20th century, been developed by the Department of Public Health.



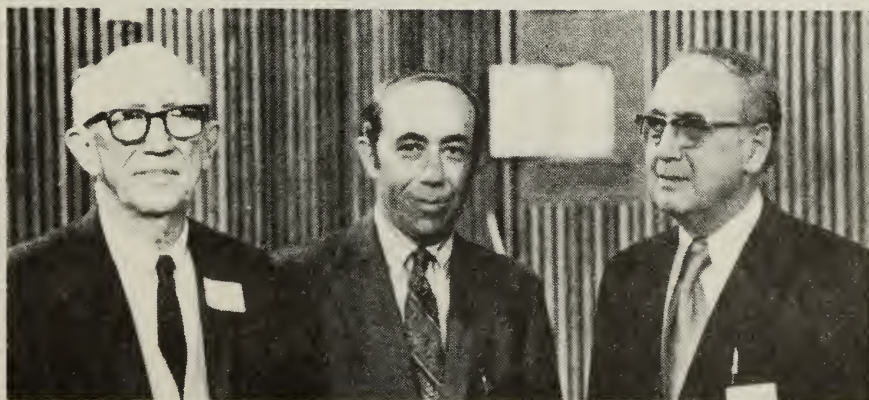
William J. Bicknell, M.D.
Commissioner of Public Health



Gov. Francis W. Sargent; George F. Grady, M.D.,
Director, Biologic Laboratories



Robert A. MacCready, M.D., Director, Diagnostic
Laboratories, 1947-1968; Robert L. Goodale, M.D.,
son of Joseph C. Goodale, M.D., who directed
production of first diphtheria antitoxin in 1894.



James A. McComb, D.V.M., Director, Biologic Laboratories, 1942-1966; Morton A. Madoff, M.D., Supt.,
State Laboratory Institute; Alfred L. Frechette, M.D., Commissioner of Public Health, 1959-1971.

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COMMONHEALTH



Massachusetts department of public health

Volume 4 number 2 Spring 1975



Massachusetts Department of Public Health
Office of Health Education
600 Washington Street
Boston, Massachusetts 02111

Publication of this document approved by
Alfred C. Holland,
State Purchasing Agent. No. 15.

The Department complies with the
Civil Rights Act, Title VI, 1964.

Second-class postage paid at Boston, Mass.

COMMONHEALTH

Spring 1975 Vol. 4, No. 2 (Series II)

Quarterly publication (Winter, Spring,
Summer, Fall issues) of the
Massachusetts Department of
Public Health
600 Washington Street
Boston, Massachusetts 02111

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Alternatives to Long Term Care

Connie Evashwick D. Sc.

INTRODUCTION

The elderly and chronically disabled in the Commonwealth are of major concern to the Department of Public Health. These two groups warrant attention because their needs for health and support services are significantly greater than those of the general population. Increasing numbers of older persons spend the remaining years of their lives in nursing homes. Not only is institutional care costly to society and to the individual, but the quality of life in nursing institutions is questionable. Furthermore, evidence is growing that many of the persons in nursing institutions are not in need of intensive nursing care.

The Department believes that the independence of the individual should be encouraged. The goal of the Department is to ensure the availability of health care through

public or private sources, and the appropriate care for the needs of particular groups and individuals. At the same time, the limited resources of the Commonwealth require that funds and manpower be allocated in a deliberate manner to cost-effective programs.

Comprehensive and accurate data on the elderly and chronically ill are necessary to make decisions relevant to the Department's objectives. Under the direction of Commissioner William J. Bicknell, M.D., the Department recently embarked upon a concentrated effort to expand and improve the quality of its information on the provision of long-term care. The University of Massachusetts Survey Research Program was called upon to interview over 2,100 elderly and chronically disabled about their needs for health and support services. Floyd J. Fowler, Ph.D., and Laurence G. Branch, Ph.D., were the principal investigators. An analysis of the costs of long-term care was conducted by Albert Lowey Ball and Allen R. Ferguson, Ph.D., of the Public Interest Economics Center. Commissioner Bicknell; Connie Evashwick, D.Sc.; Leonard Gruenberg, Ph.D.; and Arthur Mushkin, all

Connie Evashwick received her B.A. and M.A. degrees in Sociology from Stanford University. She did additional graduate studies at the Harvard School of Public Health, which granted her both her M.Sc. and D.Sc. degrees in Health Services Administration. A part-time instructor at the School of Public Health, Dr. Evashwick is on the staff of the Commissioner of Public Health, and is responsible for special projects.



Connie Evashwick, Floyd J. Fowler, Lawrence G. Branch

members of the Department, contributed to the conceptualization and development of these two studies.

Within the Department's Office of Planning and Statistics, Louis Freedman, Acting Director, and his staff conducted several special studies. Dr. Gruenberg undertook a one-day census of patients in chronic disease hospitals, Intermediate Care Facilities, and rest homes. Robert Beattie and Herman Jordan analyzed the time patients spend in general hospitals while waiting for places in nursing homes to become available. Mrs. Elizabeth Caso is presently collecting and analyzing data on recipients of home health care services. Myer

Herman, M.D.,* Special Projects, Office of Health Care Standards, examined the role of the state's chronic disease/rehabilitation hospitals. Anthony W. Sabino, M.D., Acting Director, Periodic Medical Review (PMR), reported on the initial findings of the continuing PMR effort regarding the appropriate placement of Medicaid patients in Skilled Nursing Facilities. A summary of each of these studies follows.

*This article had been prepared for publication before Dr. Herman resigned from the Department, March 1, 1975. He is presently the Medical Health Officer, Department of Health and Welfare, Bridgeport, Connecticut.



Leonard Gruenberg, Myer Herman, Susan Farrell

STATEWIDE SURVEY OF THE ELDERLY AND CHRONICALLY DISABLED

The largest study required by the Department was a survey of the elderly and chronically disabled who were living at home. Between November 1974 and February 1975, approximately 1,700 elderly and 400 chronically disabled persons age 18-64 throughout the Commonwealth were interviewed about their health status.

The Survey Research Program of the

University of Massachusetts conducted the survey for the Department. The study was begun in July 1974 and completed in March 1975.

The purpose of the survey was to gather information from persons living in communities about their basic needs for daily living, including health care, and the extent to which these needs are being met. Information about

the alternative means used by individuals to meet basic needs, and the extent of need for resources outside the family could then be used to make policy decisions regarding support services.

The Department believed it essential to collect as much information as possible. In the initial phases of defining the problem and of developing the questionnaire, representatives of numerous state offices were consulted. The final questionnaire used by the Survey Research Program was thus a comprehensive instrument designed to elicit detailed information about a number of topics, and reflected the orientation and interests of state and other organizations. The survey is thus expected to provide data directly pertinent to the program goals and policy decisions of these groups.

Questionnaire Content

The Department and the Survey Research Program jointly developed a list of basic needs for daily living. These include: social interaction, food shopping and preparation, housing, transportation, housekeeping, personal care, emergency assistance, and health care. Survey investigators, with the help of consultants, translated these needs into specific questions.

The study did not attempt to make a definitive statement about implementation. The interpretation and use of the data, as well as the recommendation for specific government or private organizations, have been left to those involved in planning service programs.

Designing the questionnaire, which took a full four months, was only the initial step. Once the instrument was ready, it was pretested on a sample of potential respondents. Modifications were then made. The complexity of the study was so great that two questionnaires were prepared, pretested and modified before the final form was accepted.

The Survey Research Program maintains a statewide staff of 80 interviewers, who are trained individually in survey techniques. For each new survey, interviewers receive intensive training and orientation in the particular questionnaire being used. Week-long training sessions were conducted in three parts of the state for the Departmental survey.

In November, with a final questionnaire, and a large, highly trained staff, the Survey Research Program began interviewing. By the end of February, approximately 2,100 persons had been interviewed.

The Sample

The survey sampled all residents of the Commonwealth age 65 and over, and the chronically disabled residents age 18-64. An individual who had chronic disabilities was identified according to any one of the following conditions: 1) legally blind or deaf; 2) lost an arm or leg, or lost the use of an arm or leg; 3) not able to leave the house on his own because of a health condition or a health-related problem; 4) because of health condition, usually in need of special help from someone, or of special equipment, to perform day-to-day tasks — such as bathing, dressing; 5) not able to work at a regular job because of a health condition or health-related problem.

The sample was selected to obtain a distribution of responses from which statistically valid projections could be made for each planning region of the Commonwealth. To ensure the optimum sampling design, the Survey Research Program consulted with the Research Triangle Institute of North Carolina, an organization that specializes in sampling designs based on U.S. Census data.

The sampling also involved selection of certain housing tracts on a random basis. The Survey Research Program interviewers knocked on over 8,000 doors, searching for elderly or chronically disabled persons. When such individuals were located, they were asked if they would agree to the hour interview. Eighty percent of potential respondents consented to be interviewed.

Clinical Follow-up

Because self-reported information can be limited on a subject as broadly defined as health, the Department considered it desirable to have a separate medical evaluation. A team of specially trained clinicians from the Hebrew Rehabilitation Center in West Roxbury, Massachusetts, did a follow-up on a sample of 200 of the respondents. The sample was composed of 100 persons who, on the basis of the first interview, appeared to have considerable health or health-related problems, and of 100 persons who did not seem to have major problems.

The clinicians were able not only to determine health status, but to specify the appropriate type of care when required. On the basis of the clinical assessments, estimates could be made of the statewide need for care equivalent to that in nursing homes.

Findings

Of the 1,700 elderly interviewed, 40 percent were men and 60 percent, women. The sex distribution of the elderly respondents is consistent with the data of the U.S. Census. Of the chronically disabled, 47 percent were men and 53 percent, women.

The age distribution of the elderly and chronically disabled respondents is presented in Table 1. The mean age of the elderly respondents was 73 years.

Table 1

Age Distribution of Elderly and Chronically Disabled Respondents

Percent of Respondents			
Elderly		Chronic	
Age	(N=1,677)	Age	(N=394)
65-69	36	19-39	21
70-74	27	40-49	19
75-79	19	50-59	33
80-84	12	60-64	27
84+	6		
Mean age	73.22		

The household composition of respondents was considered an important factor in the analysis of how needs are met (Table 2). Less than one-third of the elderly live alone. The

majority live with their spouses, while an additional 21 percent live with relatives other than their spouses. Of the chronically disabled, 13.5 percent live alone.

TABLE 2

Household Composition of Elderly and Chronically Disabled Respondents

Living Arrangement	Percent of Respondents	
	Elderly (N = 1,684)	Chronic (N = 393)
Alone	28	13
With spouse only	41	27
With spouse and other relatives	9	34
With children (and other relatives)	13	12
With other relatives	7	11
With unrelated person	2	3

A variety of information on health status was obtained. One question asked the respondent to assess his own health. Of the 1,605 elderly persons answering this question,

nearly one-fifth said that they were in excellent health; less than 12 percent reported having poor health (Table 3).

Table 3

Self-Report Health Status of the Elderly

	Percent of Respondents (N=1,605)	
	N	Percent
Excellent	297	18
Good	688	43
Fair	431	27
Poor	189	12

In addition to questions directly pertaining to health, the survey inquired about the other basic needs of daily living. The survey also

determined to what extent respondents felt that each of these needs was met. The results are summarized in Table 4.

Table 4

Extent to Which Needs for Daily Living
Are Met, for Elderly and Chronically Disabled

Daily Needs	Elderly			Chronically Disabled		
	Needs Met	Uncertain	Not Met	Needs Met	Uncertain	Not Met
Social Interaction	97	3	0.5	98	1	0.5
Food Shopping	81	12	19	58	23	7
Food Preparation	83	12	16	60	24	5
Housekeeping	91	4	15	77	8	5
Personal Care*	94	0	6	94	0	6
Transportation	80	13	24	54	22	7
Emergency Assistance	95	2	3	93	4	3

*Grooming, Dressing, Toileting, Bathing

The clinical team validated a respondent's self-evaluation of unmet needs by a medically-oriented interview. The results of the

clinical follow-up support respondents' assessments of their own needs. (Table 5).

Table 5
Clinical Follow-up Interview of Elderly to Determine Extent to Which
Needs for Daily Living Are Met

N = 169 = 100%

Need	Percent Self Sufficient	Need Met	Need Unmet
Social Interaction	(not applicable)	96	3
Food Shopping	57	43	.
Food Preparation	70	30	.
Housekeeping	53	44	3
Personal Care	91	8	1
Travel Outside Home	73	26	1
Medical/Paramedical Help on a Continuing Basis	93	7	0.5

*Less than 0.5%

Individuals meet their daily needs in various ways. A person may be entirely self-sufficient, may have to use some mechanical or artificial device, may receive help or assistance from another person, or may be entirely cared for by another person. The majority of individuals, both elderly and chronically disabled, are self-sufficient. Those who are not self-sufficient

in one or more of their daily needs may receive help from another person in their living quarters, from a neighbor, or from a more formal support system. From the respondents who said their needs were met, investigators gathered detailed information on how this was done (Table 6).

Table 6

Methods of Meeting Daily Needs of Elderly and Chronically Disabled
Respondents Who Reported Needs As Met

Elderly

Percent

Need	Self-Sufficient	Help From Home	Help From Outside	N = 100%
Food Shopping	68	27	5	1640
Food Preparation	66	32	2	1546
Housekeeping	60	33	7	1667
Personal Care*	87	13*	*	1685
Transportation	64	22	14	1625

Chronically Disabled

Need	Self-Sufficient	Help From Home	Help From Outside	N = 100%
Food Shopping	43	53	4	381
Food Preparation	53	44	3	366
Housekeeping	44	49	7	389
Personal Care*	76	24*	*	394
Transportation	70	23	7	386

*This was a combination of the responses to questions about activities: grooming, bathing, dressing, feeding. For the sake of simplicity, those who were self-sufficient in all categories were labeled self-sufficient; anyone who received help from any source in any of the four activities was categorized as needing help.

Very few persons get help from outside the home for anything except transportation, which may be the use of taxicabs, or rides with neighbors. The reported self-sufficiency of the elderly is consistent with the findings of the clinical team. The chronically disabled, however, are less self-sufficient than the elderly, but do not depend on help from outside the family any more than do the elderly.

The percent of respondents with unmet needs was quite small. The majority of elderly and chronically disabled require little, if any, services from external sources for life support. The issue of life enhancement was not considered; it might well be that the quality of

life for some elderly might be improved by having additional services available.

From the clinical follow-up, projections were made about the total number of elderly and chronically disabled whose living and health conditions were sufficiently poor to warrant a major change in living arrangement. Of the 167 respondents who agreed to the clinical interview, one person was considered a possible candidate for a rest home (Level IV nursing home); another, as needing skilled nursing care (Level I/II nursing home). Five persons would have benefited by a sheltered housing arrangement. The placement evaluations of the clinical interview are given in Table 7.

Table 7
Clinical Follow-up Determination of Level of
Care Need by Sample of 169 Respondents

Level of Care	Number of Cases	Percent of Sample
Nursing Home — Level 1 or 11	1	0.2
Level III	0	
Level IV	1	0.2
Sheltered Housing	5	1.2
Remain in Present Setting	162	98.3

Copies of the questionnaire and the full report, "The Health Care Needs of the Elderly and Chronically Disabled in Massachusetts," Volumes I and II, are available from the

Department. In addition, a data tape is available for state and other organizations that wish to do special analyses.

COST ANALYSIS

A related study is an economic analysis of the costs of providing services to the elderly and chronically ill. This was done for the Department by the Public Interest Economics Center (PIE-C) of Washington, D.C. The purpose of the analysis was to compare the costs of providing health and support services in various institutional settings and at home.

Service, Disability, Other Data

The first step was to identify types of services offered in long-term care facilities. PIE-C classified facilities according to characteristics of disabilities of patients, and of services delivered to them. By aggregating these characteristics, one can infer the types and amounts of services provided in different kinds of facilities.

PIE-C used data which had been gathered as part of the Acute Care Patient Survey done by the Department's Office of Health Planning and Statistics (described below). This study provided information on patients in chronic disease/rehabilitation hospitals, Intermediate Care Facilities, and rest homes.

PIE-C compared the three types of institutions for the demographic characteristics of patients (sex, age), types of disabilities of patients, nursing care, medications given, use of rehabilitation programs, and physician visits to patients. Other factors considered included: size of the institution (number of beds), average length of patient stay, source of payment (Medicare, Medicaid and Public Assistance), type of ownership (profit, non-profit), geographic location, and source of patients

(general hospitals, nursing homes, the community).

Cost Data

The second step of the research was to ascertain the costs of providing services. Most cost analyses done to date on long-term care facilities have concentrated on explaining aggregate costs. This study sought to relate the provision of particular services to unit costs in terms of aggregate fixed and variable components and labor categories.

The data consisted of information on finances collected routinely by the Rate Setting Commission and on labor collected by the Office of Manpower Affairs. Similar cost data exist for Skilled Nursing Facilities and home health agencies. These two types of care were excluded from the analyses because service and disability data were not available for large samples.

The total costs of care were divided into average fixed costs and average variable costs. Fixed costs included equipment, building and administrative expenses. Variable costs included the dollar cost of dietary, rehabilitation programs, therapies, transportation, nurses' (R.N., L.P.N.) salaries, salaries of other personnel, and supplies. Labor variables were computed by determining the hours of nursing service per patient day provided by each category of personnel. Labor costs were derived from calculations of the average salary received by each category of personnel.

The Analyses

Correlation and regression analyses were used to relate the variables on labor and other

costs to variables on services and other facility characteristics. Because of differences in the source of cost data, chronic disease/rehabilitation hospitals, Intermediate Care Facilities, and rest homes were analyzed separately.

Findings

The study provided evidence on how costs and labor times vary with such factors as age, sex, occupancy rate, degree of third party coverage; and on how service variables differ from each of the above. The general results include the following:

1. In all three levels of facilities, there is statistical verification that costs are influenced by the services rendered as opposed to costs of equipment, administration, or other fixed costs.

2. Occupancy rates at all three levels are somewhat less than optimal, apparently because some facilities have markedly low occupancy rates. Lower occupancy rates are related to higher costs for all three types of institutions.

3. Larger chronic disease/rehabilitation hospitals and rest homes are less costly per patient day than smaller ones.

4. The costs of serving Medicaid and Public Assistance patients are less than the costs of serving other patients.

5. The costs per patient day are less for patients coming from mental institutions than for other patients. Patients admitted to nursing homes from mental institutions are in better physical condition than other patients and receive fewer services.

6. Costs per patient day are less in profit-making facilities than in non-profit facilities. This may indicate either that profit-making facilities are more efficient than non-profit facilities, or that profit-making facilities serve patients who require less care than the patients cared for by non-profit facilities.

7. Facilities of all types located outside the Boston metropolitan area are less costly than facilities located within the Boston area.

8. Chronic disease/rehabilitation hospitals may be divided into three groups: facilities handling short-stay, intensive, "subacute" care patients; facilities handling long-stay, "chronic care" patients, and "multi-level" facilities handling some mixture of patients.

9. In chronic disease/rehabilitation hospitals and Intermediate Care Facilities, costs tend to be less when a larger number of patients are over age 80, the average length of patient stay is longer, and the percent of female patients is higher. In rest homes, the average length of stay and the percent of female patients do not appear to be significantly related to costs. Presumably, costs in rest homes are greater when a larger number of patients are over age 80. This is so because elderly patients are significantly more impaired and receive more personal care services than do other patients.

Cost of Patient Placement

Another useful product of the study is a comparison of the incremental cost of caring for persons with particular sets of needs in alternative institutional settings.

For example, persons who require daily meals and nursing care to help with bathing and personal grooming could be cared for in Intermediate Care Facilities at one cost, and in rest homes at substantially lower cost. In view of the cost and types of services usually rendered in a chronic disease/rehabilitation hospital, placement of these persons in such a facility would be unnecessary and quite costly. While this is generally known and criteria for patient placement on the basis of severity of illness have been established, the PIE-C study presents empirical evidence of the magnitude of cost differences in providing similar services in alternative settings.

Further Research

The cost analysis of alternative means of providing services to the elderly and chronically disabled was limited by the data available on patients and institutions, and on costs and services delivered. A major contribution of the study has been the analysis of the data presently collected by the state and the evaluation of the usefulness of this information.

The study has contributed to the theoretical and conceptual understanding of the components of the costs of providing services in various institutional settings. Furthermore, the PIE-C work establishes a methodology which could be used in the future to analyze the costs of services. The relationship between costs and labor, and between costs and groups of services, has been estimated for Intermediate Care Facilities, rest homes, and chronic disease/rehabilitation facilities. This analysis should be extended to Skilled Nursing Facilities and Home Health Agencies.

CHRONIC DISEASE/REHABILITATION HOSPITALS

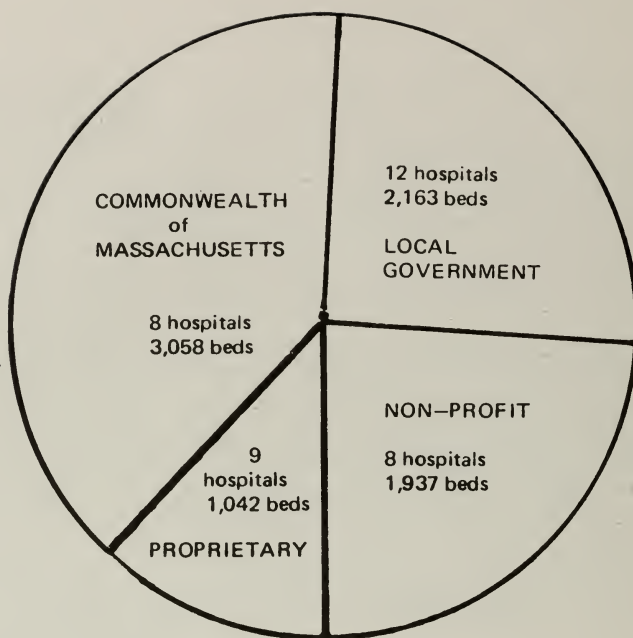
The chronic disease/rehabilitation hospital is one of the most poorly understood entities within the purview of the Department of Public Health. According to the latest available federal statistics, of the 72 hospitals throughout the nation categorized as specializing in chronic disease, 27 are in Massachusetts. This alone suggests that the definition used by the state is somewhat of an anomaly. Furthermore, in Massachusetts, the ratio of chronic disease beds per 1,000 elderly is 12.9, compared to a ratio of 3/1000 for the rest of the United States.

The Department's Special Projects in the Office of Health Standards and Regulations set out to explore the role of chronic disease/rehabilitation hospitals in the health care system in Massachusetts and to determine the need for such facilities. Project personnel visited most of the chronic disease/rehabilitation hospitals located in the Commonwealth and reviewed the pertinent professional literature. They used data collected by the Office of Health Planning and Statistics to develop a detailed statistical profile of the Commonwealth's chronic disease/rehabilitation hospitals.

The ownership of chronic disease/rehabilitation hospitals, as excerpted from the final report, is shown in Diagram 1. Government is the largest owner, with the Commonwealth operating 39 percent of all the beds and eight of the hospitals; local governments own 25 percent of the beds and 12 hospitals. Nine hospitals, having 24 percent of all beds, are non-profit; and nine proprietary hospitals contain 12 percent of all beds.

Diagram 1

Distribution of chronic disease/rehabilitation beds in CDR Hospitals (not units), by ownership; 1973.



Government hospitals tend to be larger hospitals. State institutions have a median of 205 beds; local government hospitals, a median of 126.5 beds. Non-profit proprietary hospitals average 137 beds, while profit-making proprietary hospitals have a median of 102 beds.

The majority of towns within the state are within 10 miles of a chronic disease and rehabilitation hospital. Most of the chronic hospitals serve local populations. Of the 32 largest chronic disease hospitals, 22 or 68 percent serve residents of towns within a 10-mile radius of the hospital.

According to the report, the present role of chronic disease/rehabilitation hospitals is highly ambiguous. The report concludes: "The services and levels of care currently offered by chronic

disease/rehabilitation hospitals vary between those offered by a poor nursing home and a good community hospital with comprehensive rehabilitation services. Thus, many so-called chronic disease and rehabilitation beds in the state are actually nursing home beds, but the number is unknown.

"In order to accurately determine what facilities the state actually has, and what facilities are needed, more extensive research into present chronic disease and rehabilitation patients and hospital characteristics must be done. It is believed absolutely necessary that the results of any patient surveys be clinically validated."

In evaluating the rehabilitation component of such hospitals, the study advocated that the

rehabilitation program of long-term care facilities be considered separately from the acute and chronic care program. The following distinction is made:

"A rehabilitation facility, unlike a chronic disease facility, calls for a time-limited program of patient care geared to measurable improvement in the patient's ability to become less and less dependent on the facility staff. When the patient has reached the maximum functional ability that the unit can provide, he is then ready for discharge.

"An effective rehabilitation facility demands that the medical director be a specialist in medical rehabilitation; and that there be a variety of physical, psychological, social and vocational rehabilitation specialists working as a team and that they have the space and equipment to perform their duties. . . ."

The result of this investigation is an internal document entitled "Determining the Needs for Chronic Disease/Rehabilitation Hospital Beds." The report describes the issues of classifying chronic disease/rehabilitation services in long-term care and acute hospitals, proposes requirements for a Determination of Need, offers standards for licensure regulations, and suggests further research. A second report, "Availability of Chronic Disease and Rehabilitation Hospitals to the Elderly," analyzes the effect of the geographic distribution of chronic hospitals on services.

NON-ACUTE CARE PATIENT SURVEY

In the spring of 1974, the Office of Health Planning and Statistics conducted a survey of 10,000 persons residing in long-term care institutions in Massachusetts. The purpose of

this study was to gather information about the characteristics of patients in these facilities and about the types of care being given.

The sample included 10,000 patients in 32 chronic disease/rehabilitation hospitals, 10 long-term care and rehabilitation units of acute hospitals, 92 Intermediate Care Facilities, and 41 rest homes.

Data regarding five different aspects of long-term care were collected for each patient. These included: functional capacities, mental status and behavior, medical nursing care, rehabilitation, and socio-demographic characteristics.

The information on each patient was compiled by facility personnel. In order to prepare these staff members, instructional meetings were held throughout the state one week before the survey date. After the questionnaires had been completed, a validation of a sample of 253 patients was conducted in a sample of facilities.

To classify the patients according to the state's criteria for level of care, a clinical team consisting of a physician, a nurse and a social worker reviewed a sample of 500 case records. An analysis of their findings and an extrapolation of these findings to the entire population are currently being conducted.

Some of the major findings to date are as follows:

1. Long-term care units of acute hospitals — The vast majority of patients who are cared for in rehabilitation units of acute

hospitals appear to be benefiting from multidisciplinary therapeutic programs which have, as their goal, an improvement in the functioning of each patient and his return to the community, or to a lower level of long-term care.

The long-term care units of acute hospitals not designated as "rehabilitation" units serve primarily patients who are transferred from the acute wing of the same hospital. The majority of these patients are similar to those in a Skilled Nursing Facility. The former, however, receive greater physician attention to their care. More than one-half benefit from visits from their physicians, who record some change of orders more often than once a week.

2. Chronic Disease/Rehabilitation Hospitals — Less than one-third of chronic disease hospital patients have a record indicating some change of orders by a physician more often than once a week. Approximately 10 percent of the chronic disease-hospital patients are benefiting from multidisciplinary rehabilitation programs and expect to be discharged home. The majority of chronic disease-hospital patients do not appear to be receiving hospital care. Instead, their profiles resemble those of patients in nursing homes.

3. Intermediate Care Facility (ICF) — The median length of stay of these patients is more than three years. One-half of these patients are 80 years old or more. Only 2.5 percent have a plan for discharge. These facilities thus serve mainly geriatric patients who stay until they die, or until they need more care than the facility can provide.

A new element in the ICF population is the discharged mental hospital patient. Thirteen percent of the ICF population was admitted from mental hospitals. On the average, these patients are younger and suffer from fewer disabilities than the other ICF patients.

4. Rest Home — The rest homes of Massachusetts serve primarily an elderly population. One-half of the residents are over 77 years old. While most of these residents do not have serious limitations in physical functioning, approximately one-sixth have disabilities which are characteristic of ICF patients.

The policy of deinstitutionalization of mental hospitals has had a significant impact on the rest homes in the state. Based on the sample of residents surveyed, the estimate is that more than one-fifth of them are former mental hospital patients.

PATIENT WAITING TIME STUDY

The Office of Health Planning and Statistics also conducted a one-day census of hospital patients awaiting placement in nursing homes, and compared the number to the availability of nursing home beds.

Hospitals throughout the state were requested to provide information on every patient who was waiting for placement in a long-term care facility on March 20, 1974. The placement status of the patients was followed up six weeks later.

For the same date, nursing homes were asked to report on the number of patients and vacancies. Vacancies were divided into those with beds reserved for specific patients (either temporarily out of the home or accepted for admittance but not yet admitted) and those beds which were available for placement of patients.

Findings

On March 20, 1974, the survey reported 2,021 patients in need of placement in non-acute facilities. These patients incurred 112,000 days of hospitalization while awaiting placement between January 1, 1974, and May 1, 1974. Forty-one percent were placed within the six-week follow-up period of the survey, while 45 percent were still awaiting placement. The other 14 percent either died, went home, or were no longer ready for discharge due to deteriorating condition.

The hospitals studied included a total of 189 acute, psychiatric, chronic disease/rehabilitation, and Veterans' hospitals. Patients in acute hospitals represented 47 percent of the patients surveyed and accounted for 24 percent of the total waiting days. Patients in the other types of hospitals totaled 53 percent of the patients awaiting placement and accounted for 76 percent of the waited days.

Acute hospitals had greater success in placing patients in terms of the percent of patients placed within the six-week follow-up period: 68 percent of the acute hospital patients were placed, compared to 16-18 percent of the patients in other types of hospitals.

The average waiting time of all patients for placement was 55 days. This varied from 29

days for acute hospital patients to 87 days for patients in chronic disease/rehabilitation hospitals.

Source of payment had a great effect on waiting time: Medicaid patients waited considerably longer for placement than did non-Medicaid patients. Of the patients in acute hospitals, Medicaid patients waited 36 days for placement, compared to 22 days for non-Medicaid patients.

Waiting time also varied according to the level of care sought. The average waiting time of patients in acute hospitals was 30 days for a Skilled Nursing Facility, 26 days for an Intermediate Care Facility, and 18 days for a rest home.

On the day of the survey, 2,821 nursing home beds were vacant. Of these, 857 were being reserved for specific patients. In Skilled Nursing Facilities, 410 beds were available; in Intermediate Care Facilities, 803 beds were available; and 761 beds were available in rest homes. Of the vacant beds, a large percentage (46 percent for Skilled Nursing Facilities) was not available to Medicaid patients.

The most difficult problem in placement appears to be obtaining a bed in a Skilled Nursing Facility. On the day of the survey, 771 patients were waiting for this type of bed, but only 410 beds were available. The annual statistics show that only 48 patients are admitted to Skilled Nursing Facilities each day.

Placement of patients in Intermediate Care Facilities and rest homes is less of a problem. For these levels of care, the number of beds vacant exceeds the number of patients awaiting placement.

In summary, the study provided an overview of the problem of placing Massachusetts patients in long-term care facilities, and answered the question of the magnitude of the placement problem on any given day. In addition, the study provided insight into patient characteristics, such as type of care needed, that influence how long a patient will have to wait.

The findings indicate the importance of discharge planning and of accurate placement of patients according to the level of care needed. Proper utilization of long-term care facilities, the availability of home care, patient characteristics, sources of payment, and the present reimbursement mechanisms are all confounding factors which merit further analysis before planners can reach final conclusions on the placement problem.

PERIODIC MEDICAL REVIEW

Periodic Medical Review is a program to evaluate the medical, nursing and social welfare care of the patient and to assign the appropriate placement of Medicaid patients in nursing homes. In order to receive federal funds, the state is required to review the total care and placement of Medicaid patients in nursing homes and in state mental hospitals.

In Massachusetts, the Department of Public Welfare has contracted with the Department of Public Health to do the assessments. A team consisting of a physician, two nurses, and a social worker visits nursing homes and evaluates the physical and mental condition of Medicaid patients. Upon completion, the clinical team decides whether each patient should be cared for in a Skilled Nursing Facility, Intermediate Care Facility, rest home, or elsewhere.

Periodic Medical Review was begun in December 1972. Between then and December 31, 1974, 3,291 patients in 119 Skilled Nursing Facilities were reviewed. Of these patients, 26 percent were recommended for transfer to a lower level of care. In January and February 1975, 24 percent of the 742 patients evaluated in 20 Skilled Nursing Facilities could have received services in a facility that provided a lower level of care.

Periodic Medical Review involves all Skilled Nursing Care Facilities in the state. This type of review will be expanded to Medicaid patients in Intermediate Care Facilities as well. Eventually, all Medicaid patients in nursing homes will be assessed at least once a year.

Further analysis of patient and facility data will be possible through the Long-Term Care Information System (LTCIS). This computer system combines facility inspection results, Periodic Medical Review assessment, monthly census and patient movement reports, annual health statistics reports, and Rate Setting financial data. The data bank will enable formulation of a comprehensive, integrated description of the long-term care industry, and will be used to facilitate planning and regulation. This system, begun in Massachusetts in 1974, is one of the first of its kind in the nation.

COMPREHENSIVE DATA BANK

The Periodic Medical Review, waiting-time study, and non-acute patient survey are components of a comprehensive picture of long-term care in Massachusetts. The waiting-time study indicated that on a given day, 771 patients were awaiting placement in a Skilled Nursing Facility. The PMR team

reported that approximately 25 percent of the Medicaid patients reviewed could have been cared for in a lower level of nursing institution. If the persons inappropriately placed in Skilled Nursing Facilities, on a statewide level, were located in settings corresponding to their level of need, the total Skilled Nursing Facility beds available would exceed by a factor of five the number of beds required for patients waiting for placement. Many of the patients presently placed at an inappropriate level of care cannot be transferred because of health risks involved in moving. Regulations can be enforced, however, to prevent continuation of the misuse of nursing facilities.

The data from the survey characterizing non-acute patients in chronic disease hospitals, Intermediate Care Facilities, and rest homes are being related to PMR data on patients in Skilled Nursing Facilities. The comparison of patient characteristics will make it possible to compare all levels of institutional care for the types of patients treated and types of services rendered. Patients with similar types of disabilities who receive similar services at two different levels of care may be identified. Such a classification will enable the development of patient profiles and, derivatively, the most appropriate level of care: that is, the least that is consistent with maximizing each patient's function, dignity and self-respect.

HOME HEALTH CARE

Home health care is viewed as one of the major sources of providing long-term care. Yet, at present, home care is not used extensively. Much less is known about home care than institutional care. This inhibits its development as a future source of health care and is currently being changed.

The Office of Health Planning and Statistics is collecting data on the recipients of and types of services provided by home health care. The sample for 1974 included patient discharge summaries from 45 home health agencies. This represented 20 percent of the population receiving home health services. In 1975, the data collection will be extended to all 200 of the home health agencies in the Commonwealth.

The data gathered included demographic and economic characteristics of the persons receiving services, descriptions of physical and mental status, and information on services rendered.

One major objective of the Office of Health Planning and Statistics is to learn more about those individuals who benefit from home care, in terms of demographic and physical characteristics, and in terms of the types of services which are most successfully provided in the home. Secondly, the Office is designing an information system that can be used by the Department for policy and program development and by home health agencies for management and planning.

The findings of the initial stage of data collection are still being compiled and will be reported in more detail in the near future.

SUMMARY AND CONCLUSIONS

Massachusetts ranks among the nation's leaders in per capita supply of long-term care beds. Paradoxically, pressures continue for further increases in supply, as evidenced by the long delays experienced in placing certain chronic disease-care patients and by the large volume of applications to the Determination of

Need Program for approval of the opening of new long-term facilities. A superficial analysis of the demand for long-term care beds might suggest that the state should promote the development of more of these institutions.

A study of nursing home patients conducted in Massachusetts in 1970*, however, pointed to the inappropriateness of the placement of many long-term institutionalized patients. Results from the current Periodic Medical Review support and corroborate the same general conclusions. Inappropriate patient placements in aggregate greatly exceed any unmet need. It was estimated, in 1970, that as many as 63 percent of the 31,349 individuals in licensed nursing homes did not need the full extent and range of services required by regulations to qualify a nursing home for licensure. In fact, 15 percent of the patients did not appear to require institutional care at all.

This study strongly suggested that the continuing demand for long-term care beds may be a result of the inappropriate utilization of existing facilities, coupled with the lack of sufficient community resources to prevent unneeded institutionalization of the elderly and chronically ill, and, perhaps, the lack of experience by health practitioners in utilizing such resources. The phenomena explaining the finding of the 1970 study involve a highly complex set of issues. The Survey Research study clearly shows that there is no unmet need for institutional care among the elderly in Massachusetts communities.

Increased home and community care services, changes in reimbursement incentives to existing nursing homes, improved discharge planning, linking of Periodic Medical Review findings to reimbursement, are necessary prerequisites to improving the match between nursing home supply/demand/need for nursing home beds and services.

Premature development of new nursing home facilities and programs might well preclude such basic improvements. Thus, the Department's focus is away from simply increasing supply through granting Certificate of Need to nursing home applications; it is rather on an integration of provider, regulator and payor functions.

As the health care field broadens in scope and as the involvement of the federal government increases, the role of the Department of Public Health is expanding from deliverer of services to planner for and regulator of many components of the health care delivery system. Through legal, financial, or service mechanisms, the government is now responsible for much of the health care received by the elderly and chronically disabled. In Massachusetts, the Department of Public Health evaluates health facilities, including nursing homes, for satisfactory compliance in meeting licensure requirements, correct placement of patients, safety of the physical plant, geographical accessibility, and costs of care. The Public Health Council votes to approve or deny the building of new nursing homes. Decisions are made on whether or not health care programs and institutions should be continued, reduced, or modified.

In making these decisions, the Department faces important questions on the need by the elderly and chronically disabled for health care,

*Bringing Order to the Nursing Home Muddle. COMMONHEALTH. Vol. 1, No. 1, 31-35, Winter 1972. Mass. Department of Public Health, Boston.

on alternatives for providing this care, on the economics of long-term care, and on methods that the government can use to encourage and regulate the provision of services. The more comprehensive the delivery of health care becomes, the more complicated are the questions regarding the health care system. To respond to the issues raised by such questions and to develop programs that will provide optimum utilization and distribution of the state's health care resources for long-term care, the Department must have valid, precise and detailed data.

The Department has thus embarked upon a concentrated effort to expand and to improve

the quality of the information available for making decisions on long-term care. The studies described above were undertaken during the past year to provide the data needed by the Department for informed and realistic planning. The outcomes tend to support the 1970 study, indicating that long term care facilities are not always optimally nor appropriately used. The results of the separate studies must now be integrated. As this is done, greater understanding of the long-term care health system will emerge. In the future, the Department expects to offer a comprehensive data bank and an exemplary decision-making process regarding health and support services for the elderly and chronically ill.

ANNOUNCEMENT

As a result of the serious budgetary problems now facing the Commonwealth, the publication of COMMONHEALTH will be suspended until further notice. To the many readers, within and outside the Department of Public Health, who have expressed their appreciation for and support of COMMONHEALTH, my sincere thanks.

Pearl K. Russo
Editor

Massachusetts Department
of Public Health
600 Washington Street
Boston, Mass. 02111

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